

## MANAGERIAL COMPETENCIES AND INNOVATIONS IN THE COMPANY – THE CASE OF ENTERPRISES IN POLAND

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**Abstract.** The determinants of the successful innovation implementation in the company include human capital and competencies of both managers and employees. In order for successful innovation management to occur, a manager must acquire or possess expertise in the domain at hand, as well as specific competencies. The paper has focused on the identification of the essential managerial competencies to promote and enhance innovation in companies. The study was conducted among managers of top, middle and operational management level in companies operating in Poland. It seems that competencies for each of the three group of managers have not been described in detail yet. The research has identified key competencies of managers in the context of implementing innovation in the company as well as differences resulting from the level of management in the organization. The research has helped to identify discrepancies between the current level of competencies needed to achieve organizational objectives, and the expected level ensuring maximum efficiency during their implementation.

**Keywords:** competence, managerial competencies, innovation, knowledge, skills, attitudes and behaviours.

**JEL Classification:** M5, O31.

### 1. Introduction

In the light of changing expectations and an employee model, currently a manager plays a variety of roles: a leader, facilitator, animator, coach, mentor or trainer, and his task is to: coordinate, diagnose and bring out human potential, moderate, stimulate, create, initiate, and to motivate. Already Schumpeter combined innovation with an entrepreneur (an entrepreneur as a creative innovator). In the first edition of *Theory of Economic Development* from 1912, he highlighted the creativity and heroism as the basic characteristics of an entrepreneur (Brouwer 2002). The entrepreneur had leadership skills, will and energy of action, dynamism, and constructivity understood as the ability to act contrary

to established beliefs and current rules. The introduction of new combinations required that the entrepreneur have skills and the courage to take a huge risk. He was characterized by: the willingness to take action, the ability to subdue others, and management and leadership skills (Schumpeter 2002). In recent years, the importance of human capital and competencies in the innovation process has been emphasised. Competencies of managers (determining a way of managing a company), and also human capital possessed, and therefore the competencies of other employees are listed as internal factors that may directly or indirectly affect innovation activities of economic entities (Ahmad *et al.* 2010; Galende, de la Fuente 2003; Hsien-Tang, Hsi-Peng 2010). The level of convergence of competencies possessed by managers with competency needs of the organization arising from its specific character will determine the effectiveness of the implemented strategy. A high level of organization is primarily the result of excellent management of competent managers, who effectively use the company resources by making changes (innovations), envision and create innovative products and services in organizations.

A competency profile of the 21<sup>st</sup> manager includes competencies closely related to the cognitive functioning (e.g. the ability to analyze, synthesize, and solve problems) to the competencies related to the functioning in the community (interpersonal skills, communication skills, the ability to motivate others). In order for successful innovation management to occur, a manager must acquire or possess expertise in the domain at hand, creativity, ability to carry out transformational leadership behaviours, planning and sense-making, and social skills (Mumford *et al.* 2002). Managers should constantly encourage employees to cooperate creatively in solving problems, help them in demonstrating activity, motivate them to be creative, eliminate an authoritative attitude, provide psychological freedom of action, properly inform and take care of the constant improvement of their intellectual level. It can be assumed that company innovation is conditioned, among others, by managers: their mental focus on developing innovative activities, their ability to engage the appropriate resources in this activity, to identify and use external impulses, to accept many, also controversial points of view, to do experiments with calculated risk and to seek opportunities for radical breakthroughs (Krawczuk-Sokołowska 2008).

Innovation has been studied from many perspectives in academic research, including: adoption, diffusion, organizational culture, business environment, technology, and the individual. Furthermore, there is very little research reported in the literature on exploring the competencies that managers have to have in innovation processes. Therefore, this study explores the managerial competencies critical to the success in the process of innovation creation and implementation in the company in Poland. The aim of the paper is to identify the elements (knowledge, skills and attitudes) of managerial competencies and their ranges, which are crucial for the effectiveness of the innovation implementation process in the company at different stages. Knowledge of managers' competencies in the innovation processes can lead to new perspectives for further research. Managers will gain an understanding of their own competencies and how they might improve innovation in their own organization from an individualist perspective.

## 2. Theoretical framework. Previous research

Competencies, identified with skills, were recognized in the research on leadership behaviours, however, for a long time they were considered secondary in relation to personality traits (Filipowicz 2004). The concept of competency-based human resources has gone from a new technique to a common practice for 40 years since McClelland (1973) first proposed them as a critical differentiator of performance (Boyatzis 2008). Most subsequent publications on competency (Boyatzis 1982; Woodruffe 1991) present a universal approach to competency. Boyatzis (1982) defines competency broadly as an essential, fundamental characteristic, which results in effective and/or better fulfillment of professional duties. In his opinion, professional competency represents the potential, an ability to perform something. An individual set of competencies reflects the capabilities of a person – competencies are identified with qualities of a manager who really does a good job. These include motives, personal qualities, skills, the image of oneself or one's social role, knowledge which a person uses, and a person can be aware of the existence and possession of these qualities or not. Woodruffe (1991) suggests that the term competency is used to refer to two factors: 1) areas of work at which the person is competent, the so-called “areas of competence” and the proven ability to perform a job competently (i.e. to the standards required in employment), and 2) the sets of behaviour the person must display in order to perform the tasks and functions of job with competence. Also, Armstrong (1998) distinguished between the concept of “competence” and “competency”. In his opinion, “competence” describes what people need to be able to do to perform a job well, “competency”, in contrast, is defined in terms referring to those dimensions of behaviour lying behind competent performance. These are often referred to as behavioural competencies, because they are intended to describe how people behave when they carry out of their jobs.

When competencies possessed by successful managers are discussed, the term “managerial competencies” is frequently used (Abraham *et al.* 2001; Moore *et al.* 2002; Childs, Gibson 2010; Xuejun Qiao, Wang 2009; Koenigsfeld *et al.* 2012). The structure of managerial competencies is widely discussed in the literature. (Antonacopoulou, Fitzgerald 1996; Clardy 2008; Oleksyn 2010; Alkahtani *et al.* 2011). Bird (1995) defined competencies as primary characteristics such as basic and specific knowledge, motives, traits, self-image, roles and skills. Dubois *et al.* (2004) suggest that the term “competencies” refers to the characteristics such as “knowledge, skills, aspects of self-image, social motives, feeling and acting” which is demonstrated by an individual to achieve the desired performance goal within an organization.

Managerial competency has been studied from many perspectives in academic research, including: the impact of competency-based methodologies on HRD (Rothwell, Lindholm 1999); the role which competencies play in education and training field (Camuffo, Gerli 2004; Hansson 2001; Kersh Evans 2005; Tovey 2006); individual and contextual factors influence competency levels (Wickramasinghe, De Zoyza 2008; Agut *et al.* 2003); the competency approach to study entrepreneurial and leadership characteristics (Wickramaratne *et al.* 2014; Jena, Sahoo 2014; Quintana *et al.* 2014; Jantti,

Greenhalgh 2012; Man *et al.* 2002; Schmitt-Rodermund 2004); the specific character of managerial competencies depending on the type of company, industry or market which the company operates in. (Cappellen, Janssens 2008; Suh *et al.* 2012; Trivellas, Drimoussis 2013; Chong 2013; Kożuch, Szczepańska-Woszczyzna 2014; Vila *et al.* 2014), evaluation of behavior, skills and commitment of managers (Moradi *et al.* 2011).

Competencies are classified according to different criteria, *inter alia*: a source of acquiring competencies (formal and actual competencies), the substantive scope (narrow and wide competencies), availability (organization's own competencies and acquired), the time perspective (current and anticipated competencies), a scope of impact (narrow competencies necessary for a particular position and broad ones, important in the widely understood social environment), measurability (easy or difficult to measure), ownership (individual and group competencies), content (professional, social, business, and conceptual competencies). Comparison of the most popular managerial competencies was presented, among others, by Bigelow (1994), while the classifications that are the result of modern research and studies were presented by Königová, Urbancová, Fejfar (2012), Rakowska (2007). Managerial competencies are strategically driven by organizational core competence. Employee competency and organizational core competence are similar and linked in terms of person-organization fit and person-job fit. Competence is a temporary asset that must be generated in the interactive context between individual potential and core competence of organization (Chen, Chang 2010).

Decisions and choices made by senior managers influence company performance depending on how they assess the environment, what strategic decisions they take and how they support innovation (Bessant, Tidd 2011). According to the research, an innovative manager is competitive, constantly seeking, constantly introducing changes and improvements, communicative and has good interpersonal skills, is able to inspire subordinates, to listen to their opinions and recognize good ideas. Two main factors influencing innovation competency development include: subjective factors (predispositions, traits, abilities, personality type, personal and social competencies), which are considered the most important and the working environment (Nawrat 2013). An indispensable element of effective change management aiming to implement innovations is entrepreneurial skills as a kind of "package", which consists of the following skills: highly developed understanding of the process and its various components, project planning and management, teamwork skills in uncertain conditions, leadership – having a vision and the ability to implement it, learning skills – the ability to analyze, identify positive and negative events and their causes, the ability to correct the process on their basis (Bessant, Tidd 2011). The research conducted among executives of five major corporations in the United States shows that managers – innovators should be characterized by: the ability to sense the needs, anticipate change and a positive attitude to them, determination (careful planning of activities and tenacity in action), the ability to combine the overall vision with attention to every detail, participative leadership style, stubbornness combined with persuasion skills and tact (Oleksyn 2010). According to the

research conducted by Copp (2011), innovative managers associate competencies with: interpersonal competencies, interpersonal intelligence, interpersonal skills (motivating), experience, openness, communication skills and leadership skills. According to Jones *et al.* (2000), in order to lead others in an innovation, managers should be trained to promote: imagination, community and the application of the innovation in the workplace. Gardner and Stough (2000), based on the research conducted among 250 high-level managers, suggest that managers who are more effective in innovation processes have higher levels of emotional intelligence. Emotional intelligence is based on the leader's ability to manage the employee's emotions and stress (Gliddon 2006).

### 3. Methods

The purpose of the study was to explore the perceived managerial competencies that are critical for implementing innovation. This paper also intends to present different elements of managerial competency: knowledge, skills, qualities, attitudes and behaviours. The issues which will be empirically addressed are the following: *What knowledge, skills and qualities do managers need in the context of implementing innovation in the company? Can you see any differences between the competencies possessed and expected of managers in the process of innovation implementation (is there is a competency gap)? Does the range of management competencies depend on the level of management?* The authors argues that the structure of competencies of managers in companies is not homogeneous and creates a significantly different group, moreover the expected structure of competencies depends on the level of management in the organization. The first part of the study used a content analysis based on the review of professional publications, books and scientific articles. Older publications concerning managerial competencies were chosen to compare the collected information because the most current authors follow the findings made by previous authors. During the literature research, based on the findings of the research previously conducted in different types of businesses, components of managerial competencies in the following areas were identified: knowledge, conceptual and analytical skills, social skills, job-related and cognitive managerial skills, as well as the qualities, attitudes and behaviours, crucial for implementing innovation. These sets were tested in pilot studies.

The study was conducted among the managers of top, middle and operational management level in companies operating in the Province of Silesia (Poland). We eliminated the respondents who failed to answer at least 20 per cent of the questions. The quantitative sample of analysing the managerial competencies contains 101 managers. The research was conducted by means of a direct survey. The instrument of data collection was questionnaires. A questionnaire consisting of 10 questions with a mixture of Likert-scale and closed-ended questions with one answer was developed. In addition to demographic data, information about the type and scope of the innovation implemented by the company, scope of knowledge, skills, qualities and attitudes of managers relevant to company innovation (the expected competencies), assessment of their own competency and leadership styles was collected. The components of knowledge, skills, qualities and

attitudes were listed. A five-point Likert scale was employed to gather responses, 5 indicating “maximum agreement” and 1 “no agreement”. The survey was sample-based. Non-random sampling was applied and advantages and disadvantages specific to this method of sampling were considered. A small group of those surveyed does not authorize to make generalizations, but allows the identification of the specific mechanisms and formulation of questions and conclusions. Tested on a larger sample, they will make it possible to formulate more documented and certain, useful theses on a larger scale. The data were collected in April and May 2014 and first analysed using basic statistical techniques. Data analysis was accomplished using IBM SPSS Statistics 21.

#### **4. Findings, discussion and limitations**

In the first part, we would like to describe the background characteristics of respondents and the profile of companies in this research. Respectively, 19.8%, 36.6% and 43.6% of the respondents were top managers, middle managers and operational level managers. Approximately 48.5% of the respondents were between 31 to 40 years old, 27.5% under 31 years old, 23.7% over 40 years old. An education level of the respondents indicates that 97% have university degree. 43.6% of the respondents have a degree in economic fields, 20.8% – in technology or science, 14.9% – in social and humanistic sciences, 11.9% in law and administration, 20% of the respondents have over 10-year experience on the managerial positions, 18.9% from 5 to 10 years of managerial experience, others less than 5 years of such experience. The respondents work in companies of different size, 42.6% of them in large companies (more than 250 employees), 25.7% in medium-sized companies (51–250 employees), others in small companies (less than 50 employees). In 66.6% of the companies, technological innovations have been implemented, in 58.4% of companies – product innovations, in 56.4% – organizational innovations, in 43.6% – marketing innovations. In 11.9% of the companies, the innovation was international, in 19.8% it was new in the country, in other companies the innovation was new in the region, sector or company.

Mean scores were computed on all 77 elements of managerial competencies from the survey in order to examine which individual competencies were the most important and most frequently used. In this paper, we examine the managerial competencies in six competency areas such as knowledge, conceptual and analytical skills, interpersonal skills, personal skills, managerial skills, qualities, attitudes and behaviours. The mean score for individual competencies ranged from 4.50 to 3.28 in the general population, in the group of top managers it ranged from 4.21 to 2.85, respectively 4.67–3.41 and 4.51–3.18 in the groups of middle managers and operational level managers.

The first area of assessment was knowledge. The managers ranked applicable knowledge as the most important. Knowledge of the industry is an area which had the highest mean score in the context of implementing innovation in the company, it is also an area where the managers rated their own knowledge most highly (85.1% of the respondents rate themselves highly and very highly in this respect, 12.9% on the average level, only 2.0% at a low level); In this area of knowledge, the difference between the knowledge expected and possessed

(deficit) is observed; it is the most important area of knowledge from the perspective of middle and operational managers. The next area is practical knowledge (with knowledge of the issues of organization and management and its applications, as well as technical, production and legal issues). 80.2% of the respondents rate themselves highly and very highly in this respect, 11.9% on the average level, only 5.9% at a low level; In this area of knowledge, the significant difference between the knowledge expected and possessed is observed (0.58); it is the most important area of knowledge from the perspective of top managers. Next operative knowledge (competence to use news and skills in task situations) (mean score 4.17) – 80.2% rate it highly and very highly, 17.8% on the average level, 4.0% at a low level) and knowledge of the sources of innovations and of the factors determining innovation – important for the innovation implementation, but also an area with large deficit in knowledge possessed in relation to knowledge expected. Table 1 lists fields of knowledge most frequently identified by the survey respondents as critical competencies.

A skill, as a component of competency, is proficiency at using relevant messages (in the normative form as a principle, rules, or – in the case of imitation – as role models), while performing specific tasks. This is application of knowledge in real company resource management and self-management. In the second part of the survey, the respondents rated their skills in several key areas. In the area of conceptual and analytical skills, skills of operational and strategic thinking were rated as the most important (mean score of 4.50; 84.2% have it on the high and very high level, 13.9% – average level, 0.0% – low level). In this area there is the biggest difference between skills expected and possessed. For 77.2% of the respondents, analytical skills are important (high and very high level), for 86.1% – observing the market, competitors. Table 2 lists elements of conceptual and analytical skills most frequently identified by the survey respondents as critical competencies.

Table 1. Assessment of managers' knowledge, essential in the innovation implementation processes (Source: created by the authors)

| Knowledge                             |    | Top managers |            | Middle managers |            | Operational level managers |            | Total       |            |
|---------------------------------------|----|--------------|------------|-----------------|------------|----------------------------|------------|-------------|------------|
|                                       |    | <i>M</i>     | <i>Mdn</i> | <i>M</i>        | <i>Mdn</i> | <i>M</i>                   | <i>Mdn</i> | <i>M</i>    | <i>Mdn</i> |
| of the industry                       | P  | 4.57         | 5.00       | 4.54            | 5.00       | 4.09                       | 4.00       | 4.32        | 4.00       |
|                                       | Ex | 4.21         | 4.00       | 4.51            | 5.00       | 4.51                       | 5.00       | <b>4.45</b> | 5.00       |
| practical                             | P  | 4.00         | 4.00       | 3.84            | 4.00       | 3.50                       | 3.00       | 3.68        | 4.00       |
|                                       | Ex | 4.43         | 5.00       | 4.22            | 5.00       | 4.24                       | 4.00       | <b>4.25</b> | 4.00       |
| operational                           | P  | 4.00         | 4.00       | 4.24            | 4.00       | 3.82                       | 4.00       | 4.01        | 4.00       |
|                                       | Ex | 4.07         | 4.00       | 4.14            | 4.00       | 4.23                       | 4.00       | <b>4.17</b> | 4.00       |
| of the sources of innovation          | P  | 3.50         | 4.00       | 3.49            | 4.00       | 3.34                       | 3.00       | 3.43        | 4.00       |
|                                       | Ex | 3.93         | 4.00       | 4.16            | 4.00       | 4.14                       | 4.00       | <b>4.12</b> | 4.00       |
| of the factors determining innovation | P  | 3.50         | 3.00       | 3.95            | 4.00       | 3.48                       | 3.50       | 3.62        | 4.00       |
|                                       | Ex | 3.50         | 3.50       | 4.16            | 4.00       | 4.09                       | 4.00       | <b>4.05</b> | 4.00       |
| general economic                      | P  | 3.93         | 4.00       | 3.54            | 4.00       | 3.25                       | 3.00       | 3.44        | 3.00       |
|                                       | Ex | 3.46         | 3.00       | 4.08            | 4.00       | 3.74                       | 4.00       | <b>3.83</b> | 4.00       |
| general humanistic and social         | P  | 3.57         | 4.00       | 3.41            | 3.00       | 3.41                       | 4.00       | 3.41        | 3.00       |
|                                       | Ex | 2.85         | 3.00       | 3.43            | 4.00       | 3.60                       | 4.00       | <b>3.47</b> | 3.00       |

Note: P – possessed, Ex – expected competencies of managers.

Table 2. Assessment of conceptual and analytical skills of managers identified as critical in innovation processes (Source: created by the authors)

| Conceptual, analytical skills      |    | Top managers |            | Middle managers |            | Operational level managers |            | Total       |            |
|------------------------------------|----|--------------|------------|-----------------|------------|----------------------------|------------|-------------|------------|
|                                    |    | <i>M</i>     | <i>Mdn</i> | <i>M</i>        | <i>Mdn</i> | <i>M</i>                   | <i>Mdn</i> | <i>M</i>    | <i>Mdn</i> |
| operational and strategic thinking | P  | 4.36         | 4.50       | 4.11            | 4.00       | 3.86                       | 4.00       | 4.03        | 4.00       |
|                                    | Ex | 4.21         | 5.00       | 4.67            | 5.00       | 4.37                       | 4.00       | <b>4.50</b> | 5.00       |
| analytical                         | P  | 4.21         | 4.50       | 4.30            | 4.00       | 3.93                       | 4.00       | 4.09        | 4.00       |
|                                    | Ex | 3.86         | 4.00       | 4.33            | 5.00       | 4.16                       | 4.00       | <b>4.33</b> | 4.50       |
| observing the market, competitors  | P  | 4.57         | 5.00       | 4.05            | 4.00       | 3.68                       | 4.00       | 3.96        | 4.00       |
|                                    | Ex | 4.07         | 4.00       | 4.47            | 5.00       | 4.16                       | 4.00       | <b>4.29</b> | 4.00       |
| problem-solving, decision-making   | P  | 4.14         | 4.00       | 4.43            | 5.00       | 4.18                       | 4.00       | 4.23        | 4.00       |
|                                    | Ex | 3.93         | 4.00       | 4.61            | 5.00       | 4.37                       | 5.00       | <b>4.17</b> | 4.50       |
| diagnostic                         | P  | 4.29         | 4.00       | 4.22            | 4.00       | 3.84                       | 4.00       | 4.03        | 4.00       |
|                                    | Ex | 3.71         | 4.00       | 4.36            | 5.00       | 4.05                       | 4.00       | <b>4.12</b> | 4.00       |
| proposing ideas and changes        | P  | 4.21         | 4.00       | 4.11            | 4.00       | 3.89                       | 4.00       | 4.02        | 4.00       |
|                                    | Ex | 3.71         | 4.00       | 4.36            | 4.00       | 4.02                       | 4.00       | <b>4.12</b> | 4.00       |
| technical                          | P  | 4.07         | 4.00       | 3.92            | 4.00       | 3.70                       | 4.00       | 3.83        | 4.00       |
|                                    | Ex | 3.43         | 3.50       | 3.78            | 4.00       | 3.88                       | 4.00       | <b>3.79</b> | 4.00       |

Note: P – possessed, Ex – expected competencies of managers.

In the area of social skills, the respondents rated motivating others most highly (respectively: 75.1% / 10.9% / 4.0%), the ability to listen to and accept orders (72.3% / 7.9% / 5.0%), building good relationships and trust (80.2% / 16.8% / 3.0%). These three skills were rated more highly by middle and operational managers rather than by top managers. The ability to gain power and influence was rated at the lowest level in this area (Table 3).

Table 3. Interpersonal skills of managers identified as critical in innovation processes (Source: created by the authors)

| Interpersonal skills                   |    | Top managers |            | Middle managers |            | Operational level managers |            | Total       |            |
|--|----|--------------|------------|-----------------|------------|----------------------------|------------|-------------|------------|
|  |    | <i>M</i>     | <i>Mdn</i> | <i>M</i>        | <i>Mdn</i> | <i>M</i>                   | <i>Mdn</i> | <i>M</i>    | <i>Mdn</i> |
| motivating others                      | P  | 3.86         | 4.00       | 4.19            | 4.00       | 3.93                       | 4.00       | 3.99        | 4.00       |
|  | Ex | 4.00         | 4.00       | 4.35            | 4.00       | 4.30                       | 5.00       | <b>4.28</b> | 4.00       |
| ability to listen to and accept orders | P  | 4.25         | 4.00       | 4.46            | 5.00       | 4.28                       | 4.00       | 4.33        | 4.00       |
|  | Ex | 3.91         | 4.00       | 4.39            | 5.00       | 4.31                       | 5.00       | <b>4.28</b> | 4.50       |
| building relationships and trust       | P  | 4.36         | 4.50       | 4.38            | 4.00       | 4.14                       | 4.00       | 4.26        | 4.00       |
|  | Ex | 4.00         | 4.00       | 4.08            | 4.00       | 4.32                       | 5.00       | <b>4.18</b> | 4.00       |
| delegating tasks effectively           | P  | 4.00         | 4.00       | 3.95            | 4.00       | 3.75                       | 4.00       | 3.84        | 4.00       |
|  | Ex | 3.71         | 4.00       | 4.22            | 4.00       | 4.18                       | 4.00       | <b>4.14</b> | 4.00       |
| making contacts, empathy               | P  | 4.14         | 4.00       | 4.19            | 4.00       | 4.16                       | 4.00       | 4.15        | 4.00       |
|  | Ex | 3.86         | 4.00       | 4.08            | 4.00       | 4.18                       | 4.00       | <b>4.09</b> | 4.00       |
| training others                        | P  | 3.79         | 4.00       | 4.11            | 4.00       | 3.86                       | 4.00       | 3.90        | 4.00       |
|  | Ex | 3.86         | 4.00       | 4.16            | 4.00       | 4.02                       | 4.00       | <b>4.09</b> | 4.00       |



End of Table 3

| Interpersonal skills        |    | Top managers |            | Middle managers |            | Operational level managers |            | Total       |            |
|-----------------------------|----|--------------|------------|-----------------|------------|----------------------------|------------|-------------|------------|
|                             |    | <i>M</i>     | <i>Mdn</i> | <i>M</i>        | <i>Mdn</i> | <i>M</i>                   | <i>Mdn</i> | <i>M</i>    | <i>Mdn</i> |
| cooperation in the group    | P  | 4.14         | 4.00       | 4.19            | 4.00       | 4.16                       | 4.00       | 4.15        | 4.00       |
|                             | Ex | 3.79         | 4.00       | 4.14            | 4.00       | 4.05                       | 4.00       | <b>4.04</b> | 4.00       |
| supporting communication    | P  | 4.00         | 4.00       | 4.14            | 4.00       | 3.93                       | 4.00       | 4.01        | 4.00       |
|                             | Ex | 3.64         | 4.00       | 4.03            | 4.00       | 4.20                       | 4.00       | <b>4.00</b> | 4.50       |
| managing conflicts          | P  | 4.07         | 4.00       | 3.84            | 4.00       | 3.66                       | 4.00       | 3.76        | 4.00       |
|                             | Ex | 3.50         | 3.50       | 4.14            | 4.00       | 4.02                       | 4.00       | <b>3.98</b> | 4.00       |
| group decision making       | P  | 3.93         | 4.00       | 4.14            | 4.00       | 3.91                       | 4.00       | 3.96        | 4.00       |
|                             | Ex | 3.64         | 4.00       | 3.62            | 4.00       | 3.80                       | 4.00       | <b>3.68</b> | 4.00       |
| gaining power and influence | P  | 4.07         | 4.00       | 3.86            | 4.00       | 3.75                       | 4.00       | 3.80        | 4.00       |
|                             | Ex | 3.36         | 3.00       | 3.78            | 4.00       | 3.52                       | 4.00       | <b>3.57</b> | 4.00       |

Note: P – possessed, Ex – expected competencies of managers.

Personal skills are the area where the level of the managers' skills possessed is poorer than the level expected for the efficient innovation implementation. For the respondents, the following skills are the most important in the context of implementing innovation in company: striving to achieve results (88.1% of the respondents rated it highly or very highly), coping with change (very highly or highly rated by 80.2% of the respondents), commitment (83.2%), creative problem solving (79.2%). This group of skills was rated relatively highly and evenly – mean score is from 4.17 to 4.38. Those who rated their personal skills most highly are middle managers (Table 4).

Table 4. Managers' personal skills in innovation processes (Source: created by the authors)

| Personal skills                                   |    | Top managers |            | Middle managers |            | Operational level managers |            | Total       |            |
|---|----|--------------|------------|-----------------|------------|----------------------------|------------|-------------|------------|
|   |    | <i>M</i>     | <i>Mdn</i> | <i>M</i>        | <i>Mdn</i> | <i>M</i>                   | <i>Mdn</i> | <i>M</i>    | <i>Mdn</i> |
| striving to achieve results                       | P  | 4.29         | 4.00       | 4.43            | 4.00       | 4.20                       | 4.00       | 4.29        | 4.00       |
|   | Ex | 4.14         | 4.50       | 4.57            | 5.00       | 4.28                       | 4.00       | <b>4.38</b> | 5.00       |
| coping with change                                | P  | 4.07         | 4.00       | 4.38            | 5.00       | 4.14                       | 5.00       | 4.21        | 5.00       |
|   | Ex | 4.14         | 4.00       | 4.49            | 5.00       | 4.27                       | 5.00       | <b>4.32</b> | 5.00       |
| commitment  | P  | 4.43         | 4.00       | 4.51            | 5.00       | 4.32                       | 4.00       | 4.39        | 4.00       |
|   | Ex | 4.00         | 4.50       | 4.49            | 5.00       | 4.25                       | 4.00       | <b>4.30</b> | 5.00       |
| creative problem solving                          | P  | 4.14         | 4.00       | 4.24            | 4.00       | 3.86                       | 4.00       | 4.01        | 4.00       |
|   | Ex | 4.21         | 4.50       | 4.43            | 5.00       | 4.16                       | 4.00       | <b>4.30</b> | 5.00       |
| organization of own work                          | P  | 4.14         | 4.00       | 4.43            | 5.00       | 4.26                       | 4.00       | 4.25        | 4.00       |
|   | Ex | 3.86         | 4.00       | 4.57            | 5.00       | 4.14                       | 4.00       | <b>4.26</b> | 4.00       |
| dealing with stress                               | P  | 3.86         | 4.00       | 4.22            | 4.00       | 3.86                       | 4.00       | 3.96        | 4.00       |
|   | Ex | 4.00         | 4.00       | 4.38            | 5.00       | 4.26                       | 4.00       | <b>4.26</b> | 4.00       |
| adapting flexibly to complex and vague situations | P  | 4.14         | 4.00       | 4.30            | 5.00       | 4.23                       | 4.00       | 4.21        | 4.00       |
|   | Ex | 3.71         | 4.00       | 4.43            | 5.00       | 4.05                       | 4.00       | <b>4.17</b> | 4.00       |

Note: P – possessed, Ex – expected competencies of managers.

The managerial (leadership) skills that the respondents rated most highly include: strategic thinking (87.1% of the respondents rated them as important or very important in the context of implementing innovation in company), the ability to set goals (84.2%). The ratings of skills such as motivating employees and developing their commitment, which are important from the point of view of the innovation implementation, were 4.31 and 4.30 (respectively 85.1% and 87.1%). Strategic thinking, vision, goal setting, managerial courage are the domain of top managers, and motivating and caring of subordinates – of middle managers. As regards almost all managerial (leadership) skills, there is a competency gap. Table 5 lists fields of managerial skills most frequently identified by the survey respondents as critical competencies.

Table 5. Management (leadership) skills in the context of implementing innovation in company (Source: created by the authors)

| Managerial (leadership) skills           |    | Top managers |            | Middle managers |            | Operational level managers |            | Total       |            |
|--|----|--------------|------------|-----------------|------------|----------------------------|------------|-------------|------------|
|  |    | <i>M</i>     | <i>Mdn</i> | <i>M</i>        | <i>Mdn</i> | <i>M</i>                   | <i>Mdn</i> | <i>M</i>    | <i>Mdn</i> |
| strategic thinking                       | P  | 4.50         | 5.00       | 4.27            | 4.00       | 3.93                       | 4.00       | 4.12        | 4.00       |
|  | Ex | 4.04         | 4.00       | 4.57            | 5.00       | 4.37                       | 5.00       | <b>4.41</b> | 5.00       |
| setting goals                            | P  | 4.36         | 4.00       | 4.27            | 4.00       | 4.11                       | 4.00       | 4.15        | 4.00       |
|  | Ex | 3.93         | 4.00       | 4.46            | 5.00       | 4.32                       | 5.00       | <b>4.31</b> | 5.00       |
| motivating others                        | P  | 4.00         | 4.00       | 4.27            | 4.00       | 3.86                       | 4.00       | 4.02        | 4.00       |
|  | Ex | 4.07         | 4.00       | 4.57            | 5.00       | 4.20                       | 4.00       | <b>4.31</b> | 4.00       |
| managerial courage                       | P  | 4.29         | 4.00       | 4.22            | 4.00       | 4.00                       | 4.00       | 4.07        | 4.00       |
|  | Ex | 3.93         | 4.00       | 4.49            | 5.00       | 4.30                       | 4.00       | <b>4.31</b> | 5.00       |
| ability to develop employees' commitment | P  | 4.21         | 4.00       | 4.16            | 4.00       | 3.91                       | 4.00       | 4.01        | 4.00       |
|  | Ex | 3.93         | 4.00       | 4.51            | 5.00       | 4.25                       | 5.00       | <b>4.30</b> | 4.00       |
| having the vision and implementing it    | P  | 4.36         | 5.00       | 4.03            | 4.00       | 3.80                       | 4.00       | 3.94        | 4.00       |
|  | Ex | 4.07         | 4.00       | 4.35            | 5.00       | 4.27                       | 4.00       | <b>4.27</b> | 4.00       |
| planning and managing projects           | P  | 4.07         | 4.00       | 3.92            | 4.00       | 3.77                       | 4.00       | 3.84        | 4.00       |
|  | Ex | 3.93         | 4.00       | 4.41            | 5.00       | 4.23                       | 4.00       | <b>4.25</b> | 4.00       |
| care of subordinates                     | P  | 4.14         | 4.00       | 4.35            | 4.00       | 4.09                       | 4.00       | 4.18        | 4.00       |
|  | Ex | 3.79         | 4.00       | 4.30            | 4.00       | 4.23                       | 4.00       | <b>4.18</b> | 4.00       |

Note: P – possessed, Ex – expected competencies of managers.

In the area of qualities, attitudes and behaviours in the context of implementing innovation in the company, the respondents rated the following as important: activity, openness to change, creativity, ingenuity, perseverance in pursuing the goal. Behaviours that aim to build creative teams that are open to change are more important than individualistic attitudes. Table 6 lists fields of qualities, attitudes and behaviours most frequently identified by the survey respondents as critical competencies.

Table 6. Assessment of qualities, attitudes and behaviours in the context of implementing innovation in the company (Source: created by the authors)

| Qualities, attitudes and behaviours                 |    | Top managers |            | Middle managers |            | Operational level managers |            | Total       |            |
|---|----|--------------|------------|-----------------|------------|----------------------------|------------|-------------|------------|
|   |    | <i>M</i>     | <i>Mdn</i> | <i>M</i>        | <i>Mdn</i> | <i>M</i>                   | <i>Mdn</i> | <i>M</i>    | <i>Mdn</i> |
| activity, initiative                                | P  | 4.14         | 4.00       | 4.41            | 5.00       | 4.12                       | 4.00       | 4.20        | 4.00       |
|   | Ex | 4.31         | 4.00       | 4.46            | 5.00       | 4.23                       | 4.00       | <b>4.32</b> | 4.50       |
| openness to change                                  | P  | 4.14         | 4.50       | 4.38            | 5.00       | 4.23                       | 4.00       | 4.27        | 4.00       |
|   | Ex | 4.57         | 5.00       | 4.38            | 4.00       | 4.14                       | 4.00       | <b>4.29</b> | 4.00       |
| creativity<br>ingenuity                             | P  | 4.00         | 4.00       | 4.32            | 4.00       | 3.82                       | 4.00       | 4.04        | 4.00       |
|   | Ex | 4.21         | 4.00       | 4.32            | 4.00       | 4.23                       | 4.50       | <b>4.26</b> | 4.00       |
| perseverance in pursuing the<br>goal, determination | P  | 4.36         | 4.50       | 4.54            | 5.00       | 4.33                       | 4.00       | 4.41        | 4.50       |
|   | Ex | 4.46         | 5.00       | 4.35            | 5.00       | 4.14                       | 4.00       | <b>4.26</b> | 5.00       |
| responsibility                                      | P  | 4.36         | 4.00       | 4.65            | 5.00       | 4.37                       | 4.00       | 4.45        | 5.00       |
|   | Ex | 4.00         | 4.00       | 4.32            | 5.00       | 4.30                       | 4.00       | <b>4.25</b> | 4.00       |
| conscientiousness                                   | P  | 4.00         | 4.00       | 4.46            | 5.00       | 4.26                       | 4.00       | 4.27        | 4.00       |
|   | Ex | 4.15         | 4.00       | 4.38            | 5.00       | 4.16                       | 4.00       | <b>4.22</b> | 4.00       |
| self-confidence, resolutness                        | P  | 4.21         | 4.00       | 4.46            | 5.00       | 4.19                       | 4.00       | 4.25        | 4.00       |
|   | Ex | 4.15         | 4.00       | 4.38            | 5.00       | 4.16                       | 4.00       | <b>4.22</b> | 4.00       |
| self-control in stressful<br>situations             | P  | 4.00         | 4.00       | 4.43            | 5.00       | 4.09                       | 4.00       | 4.17        | 4.00       |
|   | Ex | 4.15         | 4.00       | 4.22            | 5.00       | 4.30                       | 4.50       | <b>4.21</b> | 4.00       |
| willingness to improve one's<br>skills              | P  | 4.36         | 4.50       | 4.59            | 5.00       | 4.51                       | 5.00       | 4.53        | 5.00       |
|   | Ex | 4.21         | 4.00       | 4.24            | 4.00       | 4.16                       | 4.00       | <b>4.20</b> | 4.00       |
| consistency in performing<br>tasks                  | P  | 4.29         | 4.00       | 4.49            | 5.00       | 4.02                       | 4.00       | 4.21        | 4.00       |
|   | Ex | 4.31         | 4.00       | 4.30            | 4.00       | 4.11                       | 4.00       | <b>4.20</b> | 4.00       |
| initiating change                                   | P  | 4.21         | 4.00       | 4.16            | 4.00       | 3.81                       | 4.00       | 4.00        | 4.00       |
|   | Ex | 4.46         | 5.00       | 4.22            | 4.00       | 4.02                       | 4.00       | <b>4.17</b> | 4.00       |
| being systematic, reliability                       | P  | 3.93         | 4.00       | 4.38            | 4.00       | 4.09                       | 4.00       | 4.14        | 4.00       |
|   | Ex | 3.92         | 4.00       | 4.38            | 5.00       | 4.11                       | 4.00       | <b>4.15</b> | 4.00       |
| honesty   | P  | 4.29         | 4.00       | 4.78            | 5.00       | 4.47                       | 5.00       | 4.54        | 5.00       |
|   | Ex | 4.00         | 4.00       | 4.51            | 5.00       | 3.89                       | 4.00       | <b>4.14</b> | 4.00       |
| openness to the „otherness”<br>and diversity        | P  | 4.00         | 4.00       | 4.24            | 4.00       | 3.88                       | 4.00       | 4.04        | 4.00       |
|   | Ex | 4.15         | 4.00       | 4.08            | 4.00       | 4.16                       | 4.00       | <b>4.11</b> | 4.00       |
| independence  | P  | 4.29         | 4.50       | 4.65            | 5.00       | 4.33                       | 4.00       | 4.43        | 5.00       |
|   | Ex | 4.00         | 4.00       | 4.32            | 5.00       | 4.02                       | 4.00       | <b>4.11</b> | 4.00       |
| assertiveness                                       | P  | 3.86         | 4.00       | 4.16            | 4.00       | 3.98                       | 4.00       | 4.00        | 4.00       |
|   | Ex | 3.64         | 4.00       | 4.30            | 5.00       | 3.91                       | 4.00       | <b>4.02</b> | 4.00       |
| loyalty   | P  | 4.36         | 5.00       | 4.62            | 5.00       | 4.28                       | 4.00       | 4.41        | 5.00       |
|   | Ex | 3.77         | 4.00       | 4.24            | 4.00       | 3.82                       | 4.00       | <b>3.95</b> | 4.00       |
| inclination to take risk                            | P  | 3.86         | 4.00       | 3.86            | 4.00       | 3.74                       | 4.00       | 3.80        | 4.00       |
|   | Ex | 3.31         | 3.00       | 3.78            | 4.00       | 4.07                       | 4.00       | <b>3.86</b> | 4.00       |
| competing with others                               | P  | 4.00         | 4.00       | 3.62            | 4.00       | 3.60                       | 4.00       | 3.63        | 4.00       |
|   | Ex | 3.77         | 4.00       | 3.51            | 4.00       | 3.27                       | 3.00       | <b>3.41</b> | 4.00       |
| striving to achieve maximum<br>own benefits         | P  | 3.79         | 4.00       | 3.65            | 4.00       | 3.47                       | 3.00       | 3.53        | 4.00       |
|   | Ex | 3.46         | 4.00       | 3.41            | 4.00       | 3.18                       | 3.00       | <b>3.28</b> | 3.00       |

Note: P – possessed, Ex – expected competences of managers.

A manager should have the ability to motivate all stakeholders, particularly employees, to behave pro-innovatively. This motivation is based on recognition, it uses the measures of identification with the organization, and strengthens the internal motivation of employees, but is also based on rewarding for performance, mostly team performance. The essential conditions for the successful implementation of new solutions include identifying agents of change among employees and cooperating with them.

## **5. Conclusions**

The structure of competencies of a manager acting in contemporary social and economic conditions must be flexible, with the ability to adapt to changes in the environment. Nevertheless, even in this dynamic system such as a set of competencies of the effective 21st century manager, we can distinguish some permanent elements, which are the basis of the individual competency profile of each employee. Most authors point out similar elements that build competencies: knowledge, skills, personality predispositions, attitudes and patterns of behaviour.

Studying managerial competencies on the basis of studies of literature and in the context of implementing innovation in the company, the following categories of competencies were distinguished: conceptual and analytical skills, interpersonal skills, personal skills, managerial (leadership) skills and qualities, attitudes and behaviours. The survey used a 5-step Likert scale, where 5 meant that the competencies are very important for the innovation implementation, 4 – important, 3 – of medium importance, 2 – of little importance and 1 – of very little importance. Therefore, the division of competencies into the following groups can be adopted (Gliddon 2006): (a) expert (mean score 4.25 and above), (b) core (mean score 4.24–3.80), (c) supplementary (mean score below 3.80). The expert competencies include: knowledge of the industry, practical knowledge, operational, strategic and analytical thinking skills, the ability to observe the market, competitors, to motivate others, to listen to and accept orders, the ability to: strive to achieve results, cope with change, solve problems creatively, deal with stress, cope with stressful situations, commitment, good organization of own work, as well as: activity, initiative, openness to change, creativity, ingenuity, perseverance in pursuing the goal, determination, and responsibility. A group of core competencies includes: general economic and operational knowledge, knowledge of the sources of innovation and of the factors determining innovation, problem-solving, decision-making and diagnostic skills, the ability to propose ideas and changes, technical skills, the ability to build relationships and trust, to delegate tasks effectively, to make contacts, empathy, the ability to train others, support communication, manage conflicts, cooperate in the group, the ability to adapt flexibly to complex and vague situations, care of subordinates, as well as: conscientiousness, self-confidence, resoluteness, self-control in stressful situations, willingness to improve one's skills, consistency in performing tasks, initiating change,

being systematic, reliability, honesty, openness to the “otherness” and diversity, independence, assertiveness, loyalty, inclination to take risks.

Every innovation is a change in the system of the organization. It must be accepted within the social system of organization, both at the stage of its implementation and after its completion manager must be able to both manage the expectations of employees and lead by example. Similarly, as Jones suggested, (Jones *et al.* 2000), the research shows that a manager has to promote creativity and commitment to work relationships and focus on innovations in specific job tasks. A manager should seek to understand the psychological profile of others and exhibit empathy. The managers rated social skills more highly than the conceptual and analytical skills. Despite the declared poorer knowledge of social relationships, the managers (in their assessment) have a much higher ability in this field.

Persing (1999) suggests that managers who focus creative efforts on innovating within job tasks rather than creating new ideas lead employees to higher levels of individual innovation. The findings of the research indicate similarly that the task of the manager in the innovation process is not to generate new ideas, concepts, new products, but to strengthen and increase creativity of team of employees. Important skills include the ability to motivate others, to listen to and accept orders and build relationships and trust. The manager’s personal motivation has to come primarily from ambition, passion, tenacity and perseverance.

The effectiveness of the innovation implementation is inextricably linked to the effectiveness of the manager. The manager should have the expert competencies of strategic thinking, setting goals and planning and managing projects. He must know and use the available resources and delegate resources and tasks to followers to ensure their ability to complete a task. According to Bingham (2003), the development of strategy depends upon a manager’s ability to understand the external environment. According to the findings, managers should have knowledge of their competitor’s business and act to combat threats. They should be able to analyze the market trends and give recommendations to the organization.

A three-step division of managers’ tasks and responsibilities into: the highest level (top management), medium (middle management) and the lowest (first-line management, operational management level) (Penc 2007) also determines a diverse range of responsibilities in the innovation processes. Thus, managerial competencies in the context of implementing innovation in the company are also different at different levels of management. Knowledge that the managers surveyed possess varies depending on the level of management: general humanistic knowledge, economic knowledge, practical knowledge, knowledge of the industry and knowledge of the sources of innovation is greater at top levels of management, and middle managers have greater operational knowledge and knowledge of factors determining innovation. The higher the level of management, the higher self-assessment of managers in almost all areas of conceptual

and analytical skills. Communication, motivation, training is a strength of middle managers, while gaining authority, conflict management, delegating tasks and impeccable manner – of top managers.

The research has helped to identify discrepancies between the current level of competencies needed to achieve organizational objectives, and the expected level ensuring maximum efficiency during their implementation. The difference between the expected and actual management competencies is defined as the competency gap. The biggest discrepancy can be seen in practical knowledge, operational and strategic thinking, and operational knowledge.

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