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SUPERVISORS COMPETENCE AND SAFETY LEVEL IN COAL MINES

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ABSTRACT

Purpose	Both, theorists and practitioners of management emphasize that staff competence increasingly influences the proper operation of modern enterprises. This is significant not only when acquiring satisfactory work efficiency, but in connection to the required level of safety.
Methods	The aim of the research presented in this article is to determine essential issues in the area of underground coal mines supervisors (middle level managers) with regard to the safety level in coal mines. The research methods include survey, PAPI technique (Paper-and-Pencil-Interviewing) and a questionnaire. Supervisors from three mines participated in the research. The sample test was conducted deliberately, using a proportional scheme including the position in the supervisory department and the department type.
Results	Analysis of the results allowed for the evaluation of the twelve sub-categories of supervisors competence and knowledge level and their impact on the effectiveness of the maintenance of security. Moreover, the correlation between the determined level of separate competence sub-categories and their influence on the level of safety enabled the prioritization of the level of a lack of competence in reference to proper work safety maintenance.
Practical implications	The knowledge acquired on supervisors competence is to be applied to the prevention programme as a part of the following programme: "Methods of diagnosis and reduction programme of adverse effects related to the underground use of technical means..." (PBS, NCBiR No 1519/2012).
Originality/value	The theoretical section of the article includes the original definition and competence model, as well as a model of competence impact on the safety level in an enterprise. The approach to the research problem is also valuable – the issues of underground coal mines supervisors competence have been for the first time directly connected with the underground safety level.

Keywords

competence, safety, supervisors

1. PROFESSIONAL COMPETENCE – MEANING, TYPES OF COMPETENCE

The growth in popularity of the concept of *competence* started in 1973, when McClelland published an article entitled *Testing for Competence Rather than for Intelligence* that focused on the predominant role of competence over intelligence and knowledge in achieving professional success. The author, without precisely defining the term competence, drew attention to the fact that knowledge and intelligence tests as well as certificates do not allow for the accurate prediction of careers. According to his approach, the author pointed to the need to define the criteria for satisfactory performance and expressed the view that "in order to determine who will be a good police officer, we need to find out what a good police officer does" (McClelland, 1973, p. 7).

Currently, the term professional competence is used commonly in everyday language and is intuitively understood as a set of an employee's characteristics that determine the efficien-

cy of his work in different professional situations. In the academic sphere, the concept is ambiguous or even in definitional chaos. The thesis is confirmed by a multitude of definitions that differ not only in degree of detail, but also – creating methodological difficulties – the content of substantive findings.

As a consequence, the following question should be asked: what is professional competence? The analysis of the definitions and concepts presented in specialist literature indicates the existence of a great diversity of views concerning this subject. There can be various understanding of this term: the sum of components (Juchnowicz, 2002), a set of a person's characteristics (Whiddett & Hollyforde, 2003), a set of dispositions in the specified range (Filipowicz, 2004, 2008), a capability (Thierry, Sauret, & Monod, 1994), an ability (Dent-Sadura, 2013), generally sustainable qualities of a man (Pocztowski, 2003), a set of behaviors (Levy-Leboyer, 2007) or the potential of an individual (Męczkowska, 2003; Boyatzis, 1982 – quote after Juchnowicz, 2002; Armstrong, 2005).

In addition; what elements is the concept of professional competence comprised of? Components such as knowledge and skills are the only ones that are not doubted (Czarnecki, 2006). The others are characterized by great diversity. The following are frequently mentioned – amongst others: an attitude (Filipowicz, 2004; Thierry, Sauret, & Monod, 1994), motivation (Whiddett & Hollyforde, 2003; Juchnowicz, 2002), personality traits (Whiddett & Hollyforde, 2003; Levy-Leboyer, 2007), as well as: self-esteem associated with the functioning of the group (Whiddett & Hollyforde, 2003), abilities (Dent-Sadura, 2013) ambitions, core values, ways of performance (Rostowski, 2004), typical behavior, ways of reasoning (Levy-Leboyer, 2007), perceptions of oneself, social roles (Juchnowicz, 2002).

Classifications of competence presented in the specialist literature have a similar range of diversity, covering both their categories and sub-categories or types, and often contains dozens to even hundreds of items. Examples of the above mentioned categories are:

- the division of competence: professional, social, personal and managerial presented in the publication entitled "Universal competency model. User's Manual", prepared by the Management Observatory Foundation in cooperation with the Competency Institute,
- two categories of competence identified by the G. Filipowicz (2004) – base, including: cognitive, social, personal, as well as executive: business, corporate and managerial type,
- three categories mentioned by M. Armstrong (2005) – general and specific, threshold and performance, and differentiating,
- three categories identified by T. Rostowski (2004): key, specific functions and a specific role,
- two categories defined by J. Kubicka-Daab (2001): functional and behavioral,
- two subsets of competence: general, including managerial and technical, determined by Rothwell, Hohne, and King (2000),
- four categories adopted by T.P. Czapla (2012): leadership, general, technical and personality traits.

Theorists and researchers dealing with the issue of professional competence, however, agree on the need to include the subject's behavioral aspect. This fact leads to the conclusion that the determinants of behavior undertaken in the workplace need deeper analysis, being a multiplicative function of ability (organizational and symptoms) and motivation (Martyka, 2013). This assertion results from the social model of human functioning by A. Bandura (2007), recognizing the triad of mutual (two-way) causality between: features of an individual, characteristics of the environment and behavior (Fig. 1).

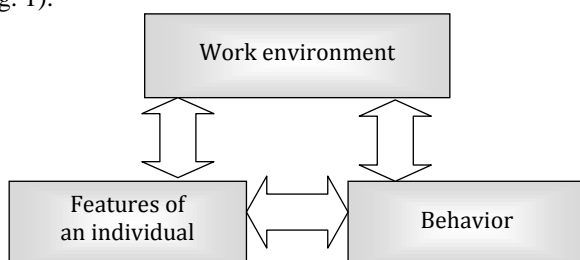


Fig. 1. Social model of human functioning by A. Bandura (2007)

Thus, **competence can be defined as a multiplicative function of subjective human capabilities in the field of efficient, effective and safe performance of tasks and the motivation to make full use of these opportunities in the workplace, where the capacity and motivation are considered in the context of its role as a professional and physical characteristics and organizational environment** (Fig. 2).

The classification of competence has adopted division into three categories: professional, social and personal.

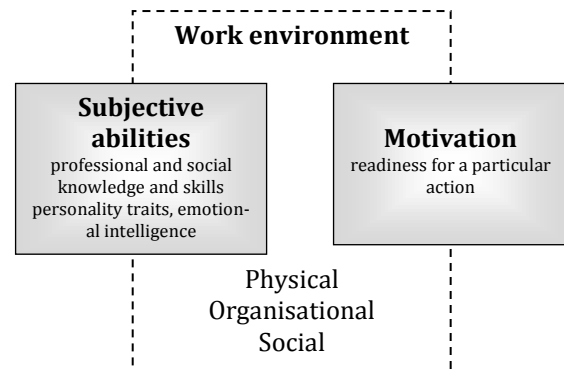


Fig. 2. Competence model (own elaboration)

The function used in the definition and described as multiplicative, means that in order to achieve the desired result (professional behavior) it is necessary to simultaneously demonstrate the necessary opportunities and symptoms of motivation to engage in behavior which guarantees a certain level of performance. Thus, a person characterized by a high capacity, but without motivation strong enough, will not behave in a desired way, and simultaneously, strong motivation not supported by adequate capacity will not allow for the achievement of high efficiency.

Two terms included in the definition require further comment: motivation and subjective capabilities. The first is an internal process conditioning the unit to strive to achieve the objective (Reykowski, 1978). In other words, it is man's state of readiness for a particular action. The second term, subjective capabilities, is the characteristics of an individual, taking into account his or her desirable properties due to the implementation of company objectives and bench tasks, including: knowledge and expertise, specialist/professional skills, social skills, emotional intelligence and personality traits.

Is it possible to draw up a detailed list of the types of competences to guarantee success in a given position in an enterprise? It seems to be a relatively difficult task, because the number of types of high competence at an individual level cannot decide by the level of professionalism, but their appropriate configuration consisting of a specific set of types of competences to a level appropriate to the task and the conditions under which it is implemented influence the level of professionalism. This set will allow a synergistic effect to be obtained and consequently will enable a high level of performance.

2. COMPETENCE AND WORK SAFETY

The belief that competence significantly influences the state of safety in an enterprise is common. The obvious elements of competence are the hardest to demonstrate and prove. This may be the reason for the lack of research that

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