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## Shaping the Green Competence of Employees in an Economy Aimed at Sustainable Development

Today, it is often pointed out that companies operate striving towards a sustainable economy. Managers must not only be aware of the economic and social aspects of their business, but also of their impact on the natural environment. From such a perspective, the formation of pro-environmental competence among employees—also known as “green competence”—is becoming increasingly significant in the functioning of a company. The aim of the article is to present key ways of shaping green competence among employees. Theoretical considerations were enriched by the results of the author’s own research (pilot studies).

**Key words:** green competence, sustainable development, enterprise, green jobs

### Introduction

Enterprises operate in a dynamically changing reality. This fact makes the people responsible for their management face ever-new social, economic, and environmental challenges. Among these challenges, it is important to emphasize issues related to the impact of the enterprise on the condition and quality of the natural environment<sup>1</sup> (Potocan et al., 2016; Herrmann and Guenther, 2017). As researchers into the subject show, the way in which a business is managed within this field may have an impact on not only growth in its value (Hang and Chunguang, 2015) or the opportunity to develop a significant competitive advantage (Liao, 2016), but even the continued func-

1 In this article, the term *environment* should be understood as all natural elements, including those that have been transformed by human activity. Due to significant changes introduced by man, *environment* will be used as a substitute for *natural environment*.

tioning of the market. This is because consumers are increasingly choosing products and services taking into account not only quality or price, but also the conditions in which the products were created (Brécard, 2013; Zhang et al., 2015). The circumstances under which a product or service is created are considered in a very broad sense, taking into account both working conditions and the environmental impact of the enterprise (this aspect will be discussed in more detail below). By entering into a scientific discourse on the topic of business operation in a sustainable economy—an objective of this paper—the author presents key ways for shaping green competences among employees. These specific competences are defined as a combination of three main components—ecological knowledge, skills, and pro-environmental attitudes—in the literature of the subject (Subramanian, 2016). The hypothesis is that green competences can be shaped in the same way as other competences in the enterprise—through training, the assessing of employee attitudes and behavior, and through involving employees in company initiatives. In addition to a review of topical literature, this article presents the results of own research (pilot studies). The resultant collected information will be used to design a study aimed at understanding the role of “green” jobs in the development of the local labor market.

### **The Role of Enterprises in the Process of Building Sustainable Development**

The development of sustainable development—i.e. a targeted state in which the attainment of the needs of the present generation does not undermine the developmental potential of future generations (*UN Report of...*, 1987; Borowy, 2013)—is a central challenge for many countries and the international community in their medium- and long-term strategies for the next few decades (Ryszawska, 2013). Nevertheless, discussions still continue on how to achieve such a status not only as quickly as possible, but above all in the best social, economical, and environmental way. The European Commission has created an important solution in this area. In the *Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth*, the European Union institution responsible for current European Union policy proposes the gradual build-up of a sustainable economy that takes into account the various levels of socio-economic development of individual members of the Community. The European Commission also emphasizes the need to support and initiate actions aimed at building a low-emission and resource-efficient economy (*Europe 2020: A Strategy...*, 2010).

A gradual qualitative change in the current methods of management is taking place as a result of actions aimed at implementing the socio-economic and theoretical assumptions of sustainable development found in the Europe 2020 strategy. Topical literature indicates a slow transition from the brown, carbon-based economy (Svendsen, 2013) to a green, renewable energy-based. In it modern technologies strive to achieve low emissions and resource efficiency as well as environmental management in enterprises (Burchard-Dziubińska, 2014; Kozar, 2017). To this end, in addition to generating an environmental awareness among the public (potential consumers of products and services), the active involvement of enterprises that are largely perceived as being responsible for environmental pollution is necessary (Hill, 2010; Kraft, 2017).

Identification of the negative effects of an enterprise's activities by its management on the state and quality of the environment can lead to a number of important consequences for building pro-environmental relations between business and the environment. In addition to modernizing the technological production process or service provision by the enterprise (Geels et al., 2015), this may involve the shaping of suitable environmental competences among employees (Harris and Crane, 2002; McGuire, 2010; Haddock-Millar et al., 2016). Such competences are also referred to as ecological competences or green competences (Chodyński, 2007). The process of their formation in enterprises still lacks depth (Manika et al., 2015). It should be emphasized that the development of such competences among a company's employees will result in a faster pace of building a green economy. As a consequence, it will progressively build sustainable development, understood as a balance between social, economic, and environmental aspects.

### **The Importance of Green Competences in the Functioning of the Enterprise**

As research in this field shows, a source of competitive advantage on the market can involve the building and maintenance of appropriate interactions with the environment (Kubasik, 2006). Creating positive relations in this area depends on the knowledge and skills of company staff. It is for that reason that it is necessary to develop green competences among employees properly.

Both internal and external conditioning can be the reason behind the undertaking of attempts at shaping green competences among employees in the enterprise. In the first case, competences are created through initiatives on the part of company managers. They are a derivative of the prospect of further development or a way to reduce environmental risks, i.e. a crisis that may imply a number of adverse

consequences, including those of a financial nature (Sharfman and Fernando, 2008). On the other hand, with regard to external stimuli contributing to the creation of green competences among employees, it is important to mention pro-ecological actions as taken by local communities (e.g., environmental protests) or the need for companies to comply with applicable laws. Certain jobs require some green competence for the proper performance of professional activities. Such specific jobs are called “green” jobs in topical literature (Gülen, 2011; Stoevska, Hunter, 2012; Consoli et al., 2016). Such jobs, by virtue of their high level of environmental competence, influence the minimizing of the negative impact of business activity on the environment.

### **The Essence of Green Competences: Basic Distinction and Ways of Shaping Them**

The green competences of employees are the result of their knowledge and skills in applying pro-environmental solutions in the company. Due to the complexity of the concept of competence itself, a clear distinction should be made between behavioral competences and functional ones. The first are “soft” and refer to the way in which employees must behave in order to work properly (without chancing environmental risks). Among green behavioral competences that may be desirable on the part of employers are creative thinking and ethical behavior regarding the environment, or the ability to manage people in a situation of environmental risk. Functional skills, in their turn, define “hard” skills and encompass what employees must know in order to be able to do their job well. Among these special attention should be paid to expertise in resource efficiency, waste segregation (Williams, 2014), and the ability to drive vehicles efficiently in terms of energy use.

The development of green competences as required by a given enterprise can be achieved by:

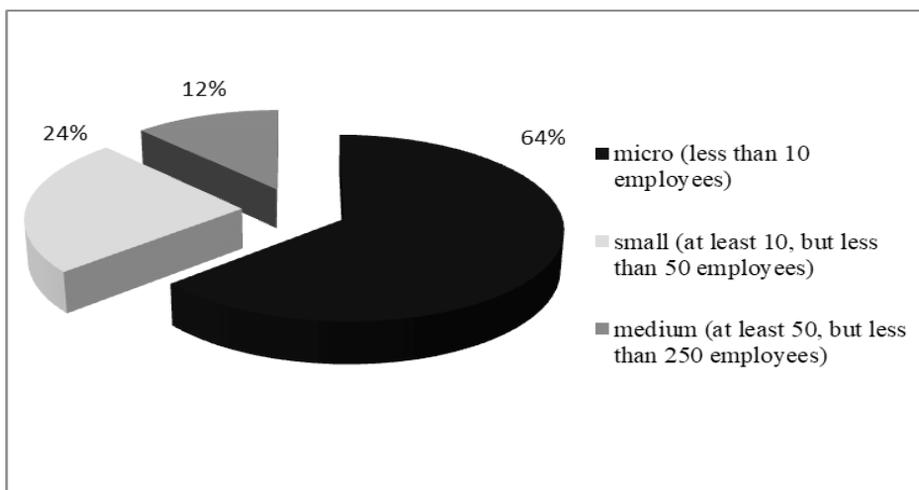
- Training,
- Assessment of the attitudes and behaviors of employees, and
- Engaging employees in enterprise initiatives of an environmental nature.

The above-mentioned forms will be discussed further when quoting the results of the pilot studies. However, it should be noted at this point that the development of green competences in an enterprise should be enduring in character. This observation is derived from the fact that such very specific competences are subject to relatively rapid devaluation as a result of the dynamic development of technology and knowledge involving pro-environmental solutions.

## Shaping the Green Competences of Employees: The Results of Pilot Studies

The aim of the research was to answer the question of how the green competences of employees in micro, small, and medium enterprises are developed in the sections and divisions of the economy as defined by the PKD (Polish Statistical Classification of Economic Activities). The size of the company was determined on the basis of the number of employees. The study was conducted from May to June of 2017. A survey questionnaire was sent to thirty–seven companies. Not all of them consented to participate in the study. Moreover, two surveys contained incomplete data. For these reasons only thirty–three questionnaires were analyzed. Company structure is shown in Chart No. 1.

**Chart No. 1.** Structure of Surveyed Enterprises by Size



Source: Own study.

In light of the topic of sustainable development as discussed in the study, it was assumed that the main area of activity of the surveyed company must be connected with one of the following sections (and specified divisions) of the economy as defined by the PKD:

- Manufacturing (repair, maintenance, and installation of machinery and equipment);
- Water supply, waste and sewage management, and remediation activities (water collection, purification, and supply; wastewater treatment and disposal, waste

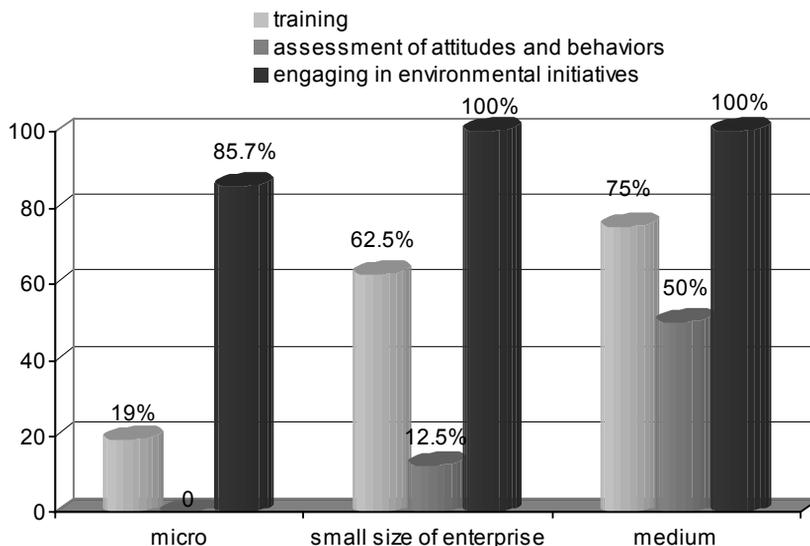
collection, processing, and disposal, recycling raw materials, remediation activities, and other waste management services);

- Construction (construction of buildings);
- Transportation and storage (overland transportation and pipelines, warehousing, and transportation support);
- Professional, scientific, and technical activities (architectural and engineering activities, and technical testing and analysis);
- Administrative and support services (tourism organization activities, travel agents and tour operators, other reservation services and related activities, and building maintenance services and landscape activities);
- Education;
- Other service activities (computer as well as personal and household goods repair and maintenance).

These sections and their divisions, as discussed in literature, are considered key areas of the economy in which dynamic changes relating to sustainable development can already be observed (Kryk, 2014). It is for this reason that it may be assumed that the green competences of employees will develop there. All of the companies participating in the survey were established and operated in Tomaszów County (Łódź Voivodeship). The functioning of the surveyed entities in one strictly defined area was important, as it eliminated the need to consider environmental issues as a key factor in differentiating the direction of development of green competences among employees.

The questions in the survey focused on the training, attitudes, and behavior of employees as well as involvement in company environmental initiatives. At the same time, these were three basic ways of shaping competences, including green employee competences. The survey showed that only two of the companies surveyed made no attempt at developing environmental competences among their employees (they were not considered key to the company's development). The most widely applied form of green competences, regardless of company size, was the involvement of employees in environmental initiatives (Chart No. 2).

Chart No. 2. Enterprise Size and Ways of Shaping Green Competences



Source: Own study.

Training (especially aimed at building functional competences) is a particularly important way of shaping green competences. For this reason, the owners or managers of the surveyed companies were asked to indicate whether they organize training involving the practical application of environmental solutions in the enterprise for their employees. In light of the pilot studies, it can be stated that according to respondent declarations the number of employees involved in training depends, in principle, on the content of the information provided. It is therefore important to distinguish between training aimed at conveying specific narrow expertise and training intended to shape employee “soft” skills in the field of environmental protection. The training mentioned first is directed at production managers, administrators, managers, and specialists (in training, technical operations, and investment)—employees on whom the proper functioning and development of the company depends. Moreover, it is important that such training be carried out by external companies and that it be the result of:

- The intention to introduce (or the actual introduction) of appropriate technological changes in an enterprise that have a lesser negative impact on the state of the environment and its quality;

- A need to get acquainted with current trends in nature conservation (technological innovations and legal solutions);
- A willingness to undertake actions aimed at minimizing probable environmental risk;
- A need (or intention) to implement a certified environmental management standard (e.g., EMAS or ISO14010).

Training designed to create “soft” green competences is usually carried out by persons responsible for this area in the enterprise. Such training is usually directed at the general staff. The main goal of such training is to draw the attention of the staff to the need for a more economical consumption of resources (primarily water and energy) and to provide appropriate (ethical) environmental management. Apart from the purely financial dimension (savings on the purchase of raw materials), the development of such competences among all employees also has much broader importance. It can contribute to the building of a positive image of the company within its surroundings (Kozar, 2016). In case of both types of training courses, respondents declared that access to them was very limited (a small, non-diversified market offer compared to expectations).

In the light of the pilot studies, assessing employee attitudes and behaviors is the least used form of shaping green competences in the enterprise. In just three cases (9% of all respondents), managers stated that their company’s employee assessment system is paying attention to environmental issues. This is mainly due to the costs of proceeding with such a project as well as the subsequent functioning of the relevant assessment system (in this case, the cost of measuring environmental effects). Moreover, monitoring specific environmental effects in and of itself is not easy because it requires both specific expertise and investment in appropriate measurement equipment.

Literature on the subject indicates that the shaping of employee attitudes, understood as conscious interaction aimed at consolidating or changing them, should be important to each and every organization (Rogozińska–Pawelczyk, 2014). In the case discussed in this article, such effort should lead to the generation of desirable environment-oriented attitudes in the company while eliminating unwanted one so as to foster the mission, strategy, and goals of the organization. This can be done through appropriately screened systems of assessing the attitudes and behavior of employees, where the incentive for specific behavior is the desire to receive bonuses, win a prize, or avoid punishment (Sidor–Rządkowska, 2011). The study found that in companies that declared that environmental attitudes were evaluated, bonuses and prizes were also awarded. However, it should be emphasized that such bonuses

were awarded solely on the basis of group evaluation criteria. According to the respondents, individual assessment in the discussed areas would involve significant costs to the company and would be impossible in practice due to technological barriers or staffing constraints (lack of competent management personnel and an inability to designate a person to perform such functions). In the case of group assessment, attention is paid to saving water (taking care that taps are closed and defects reported), materials (no printing of e-mails), energy (turning off lights), and equipment (e.g., shutting down computers and machines when not in use). All these aspects are subject to random inspections. The smallest number of deficiencies contributes to a positive recommendation for the given group of employees. That group receives a bonus predefined in company bylaws. On the other hand, the awarding of a prize is determined by the subjective assessment of the employee's superior, where exceptional care of equipment and rigorous compliance with requirements for saving water, office supplies, and electricity are considered. Only in one of the surveyed companies did not only superiors but also employees actively participate in an assessment of the environmental attitudes of their colleagues. The examined companies did not apply penalties for improper environmental behavior.

Most companies tried to shape the green competences of their employees by engaging them in various types of initiatives. This primarily involved the collection of suitable raw materials for recycling. The goal of company managers in such collections was to educate employees about the need for workplace waste segregation.

## Conclusion

The increase in the importance of green competences in the functioning of modern enterprises is a fact. The reason behind this is the gradual moving of the economy onto completely new tracks, i.e. transforming it into a green economy. An indispensable element for these changes is the need to shape the green competence of employees. This can be done through training (the main form of creating functional competences), assessing employee attitudes and behaviors, and engagement in various types of initiatives of an environmental nature as undertaken by the enterprise.

As demonstrated by pilot studies, a significant barrier to the development of green competences among employees when they are based on external training is the limited financial potential of enterprises. What is clearly noticeable is a dearth of specialized training and limited staffing capabilities in the companies themselves (both in terms of access to staff and their level of pro-environmental knowledge).

Despite these barriers, it should be emphasized that managers of companies will strive to increase the level of green competences among employees. Faced with a changing socio-economic reality, such competences are increasingly needed in order to preserve or gain a competitive advantage by the company.

According to the author of this study, in light of the increasing importance of green competences in business activities, further scientific discourse aimed at deepening knowledge on this subject is worth pursuing. This should lead to the development of models, systems, and best practice that will provide support for business executives in their day-to-day implementation of sustainable development. This aspect is especially important as the issue concerns all businesses (regardless of size). For these reasons, all analyses and reflections can prove to be useful tools showing how to create green competences. Such analyses will be of particular value in the case of micro-, small-, and medium-sized enterprises, where financial and staffing potential are a significant barrier to the creation of such competences.

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### **Kształtowanie zielonych kompetencji pracowników w gospodarce ukierunkowanej na zrównoważony rozwój**

#### Streszczenie

Współcześnie wskazuje się, iż przedsiębiorstwa funkcjonują w gospodarce ukierunkowanej na zrównoważony rozwój. Osoby zarządzające nimi muszą dostrzegać więc nie tylko aspekty ekonomiczne, czy też społeczne ich działalności, ale i te dotyczące oddziaływania na środowisko przyrodnicze. W takim ujęciu kształtowanie

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wśród pracowników kompetencji prośrodowiskowych, zwanych również zielonymi kompetencjami, nabiera coraz ważniejszego znaczenia dla funkcjonowania przedsiębiorstwa. Celem artykułu jest przedstawienie kluczowych sposobów kształtowania zielonych kompetencji wśród pracowników. Rozważania teoretyczne wzbogacono wynikami badań własnych (pilotażowych).

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