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Opportunities and Conditions for the Development of Green Entrepreneurship in the Polish Textile Sector

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Abstract

Green entrepreneurship is an important phenomenon from the point of view of economic development. However, the topic has not been sufficiently analysed and knowledge in this area is not systematised. Supporting the development of green enterprises and increasing the resilience of the economy and natural ecosystems requires a more in-depth analysis of the conditions and factors that influence the development of green entrepreneurship. Green (or ecological) entrepreneurship is closely related to the textile sector, which should be particularly interested in the introduction of various types of eco-innovations that reduce or prevent negative environmental impacts while contributing to the achievement of competitive advantage and profitability. The textile sector is focused on sustainability issues – both in terms of environmental protection and global social responsibility. The goal of this paper is to organise knowledge on the phenomenon of green entrepreneurship and to analyse the prospects of its development in the light of opinions of Polish textile industry entrepreneurs. For this purpose, a survey was conducted on 56 Polish companies from the textile industry. The results obtained indicate that Polish textile industries are interested in implementing all kinds of eco-innovations concentrated in the so-called environmental management system, which should become part of any organisation in the sector analysed. The paper is divided into three main parts. In the first part the phenomenon of green entrepreneurship is characterised. Then the methodology of the survey is presented. The final part is a presentation of results of the survey conducted in Polish textile industry enterprises.

Key words: textile industry, green entrepreneurship, innovations, European Union.

Introduction

Entrepreneurs are business people who realise new business opportunities by taking risk. They introduce innovations and new ideas that determine socio-economic development. The concept of entrepreneurship is immanently linked to the development of the economy, which is achieved through establishment of new enterprises, their successive development, creation of new resources, markets, technologies, products and services, processes and transactions, thus contributing to creation of value.

In today's economic reality, more and more time is devoted to entrepreneurship issues, in particular from the point of view of their impact on economic development, stimulation of local initiatives and reduction of unemployment. The role of entrepreneurship in sustainable development is relatively unknown. In the context of the *Europe 2020* strategy which envisages smart, sustainable and inclusive growth as well as competitiveness of EU regions, a renewed focus on entrepreneurship has emerged as one of the most important and increasingly desirable factors for growth and employment in Europe.

Green entrepreneurship is an increasingly important phenomenon from the point of

view of economic development, but it is still not sufficiently explored. Supporting the development of green enterprises and increasing the resilience of the economy and natural ecosystems requires a more in-depth analysis of the conditions and factors that influence the development of green entrepreneurship.

In Poland, the topic of the development of green entrepreneurship in the textile sector is new and not described in the literature of the subject. Therefore the goal of this paper is to try to organise knowledge about the phenomenon of green entrepreneurship and to analyse the prospects of its development in the light of opinions of Polish textile industry entrepreneurs. The paper is divided into three main parts. In the first part the phenomenon of green entrepreneurship is characterised. Then the methodology of the survey is presented. The final part is the presentation of results of the survey conducted in Polish textile industry enterprises.

Green entrepreneurship in the light of the literature of the subject

Interest in identifying the determinants of “green development” has grown in recent years, although this approach to entrepreneurship is still not common and is rarely

described in the literature of the subject. Among the available terms describing green entrepreneurship are the following: eco-entrepreneurship, entrepreneurship of the environment, sustainable entrepreneurship, and ecological entrepreneurship. The first attempts to define the terms related to green entrepreneur and green entrepreneurship emerged in the early 1990's. The first researchers who were interested in these issues were Bennett [1], Berle [2] and Blue [3], who combined the terms entrepreneurship and environment. The idea of supporting and promoting entrepreneurship which they described, aimed at protecting the environment and using it in a sustainable way, has been greatly expanded.

Nowadays many researchers associate green entrepreneurship with innovations. MJ Dollinger believes that entrepreneurship is the creation of innovative economic entities or organisation networks with the aim of achieving profits or growing in conditions of risk and uncertainty [4]. Choudhary and Patil [5] in their studies on green entrepreneurship define it as a kind of technological innovation that reduces the negative impact of human activities on the environment. At the same time, they stress that it can contribute to solving environmental problems such as global warming or loss of biodiversity. Ambrish [6], in turn, stresses the combination of innovation and green entrepreneurship in the context of creating a new business or reviving an existing one by exploiting new opportunities. In this way entrepreneurs shape the economy by creating new wealth and new jobs as well as new products and services. Walas and Trębacz [7] emphasise that entrepreneurship does not exist without innovations. Modern innovative enterprises treat them as a key to market success. Moreover Farinelli et al. [8] state that green entrepreneurs are of crucial importance to the economy as they make significant contributions to job creation. They are also recognised as engines of change and have been credited with introducing innovation, adapting to new ideas and responding to changes more rapidly and efficiently than larger companies. Green economy investments constitute a unique opportunity for emerging economies and countries in transition to accelerate compliance with global standards, while ensuring sustainable economic growth [9].

International organisations such as OECD, UNCTAD, UNIDO, WTO and

FAO have also joined in the process of defining and systematising knowledge about green entrepreneurship. They have jointly worked out the concept of successive transformation of the global economy into a green one. In 2009, the Organisation for Economic Co-operation and Development (OECD) adopted the concept of "green growth", stating that countries should pursue the goal of building sustainable low-carbon economies by developing international cooperation, which will play a crucial role in such areas as the development of clean technologies and the international market for ecological goods and services.

The World Business Council for Sustainable Development (2010) promoted the development of a green economy that should be based on solving environmental problems and sustainable development. These assumptions, however, will not be realised without the involvement of the smallest entities, which have a real impact on sustainable local and regional development. Therefore the latest studies on green entrepreneurship show that it is a combination of pro-environmental practices and the financial goals of entrepreneurs. Green enterprises are therefore identified as new entrepreneurs who wish to combine ecological and economic awareness in a holistic way. Kirkwood and Walton also point out that there is one thing that differentiates these entrepreneurs from others – a passion for the environment [10]. According to O'Neill and Gibbs [11], the idea of green entrepreneurship manifests itself in actions and motivations resulting from the desire to solve specific environmental problems or to transform the sector so that alternative and more sustainable products and practices become more common. An interesting view was presented by Jolinki and Niesten [12]. According to them, a green entrepreneur is one who runs a business aiming to achieve both environmental and economic goals and wants to transform the sector to make it more sustainable. The authors suggest that this will require the "greening" of traditional sectors and the shift of all economic actors, by both producers and consumers, towards sustainable practices. Such actions may entail the use of opportunities for the development of new ecological activities, by building new skills, improving qualifications and creating jobs. Additionally such activities will require the adoption of new technologies and business models, the development of

new products and supporting new demand patterns. In this context, there will also be a need for management changes related to the reallocation of capital and labour resources within particular sectors as well as in individual regions.

The growth of green entrepreneurship is most noticeable in the SME sector, which accounts for about 99% of all enterprises in the EU and employs two thirds of the workforce in the region. The green growth model promoted by the Europe 2020 Strategy, including the transition towards sustainable practices both in production and in services, is important for the green development of Europe.

The greatest opportunities for the development of green entrepreneurship are visible in service sectors related to ecological production. Therefore opportunities for the development of green entrepreneurship can be sought especially in the textile sector. Taking advantage of opportunities which today's SMEs are given by the EU is largely connected with creative and innovative small and medium-sized enterprises operating in services such as the design and delivery of bio-energy solutions. Supporting firms (new or existing ones) which want to function in areas of new technology is important for unlocking the potential of green entrepreneurship [13].

Farinelli, Bottini et al. [14] undertook research that contributed to the identification of the key and most important characteristics of green entrepreneurs. According to them, these are:

- lack of risk aversion. They take new business opportunities and engage in undertakings which usually involve very high risks;
- strong internal motivation. Their activities have a generally positive impact on the environment and on economic stability, and they consciously seek to secure a more sustainable future;
- concentration on a combination of business and a positive impact on the environment while at the same time gaining significant financial benefits;
- awareness of creating a more sustainable future.

Analysis of the subject literature proved that green entrepreneurship is a relatively new phenomenon, studied in various cross-sections. However, from the point of view of the analysis conducted, the

Table 1. Activities promoting the idea of green entrepreneurship in selected European countries. **Source:** Own elaboration based on [17].

Country	Action	Impact description
Bulgaria	Bulgarian Strategy 2020	The idea of green entrepreneurship included in the document aims to promote and inform about green entrepreneurship in the context of transition to a low-carbon economy, to increase the use of renewable energy (by 16% by 2020) and to modernize transport;
	Energy efficiency and green economy	The program implemented by the Ministry aims to support sustainable activities in the area of production technology
	National Strategy for Sustainable Development of the Republic of Bulgaria.	Providing a system of indicators for monitoring activities; introduces education for sustainable development which, according to the strategy, has to penetrate into all training programs at all levels.
	Program to support education for sustainable development	Its main objective is to „to support the establishing of education for sustainable development in all forms of formal and non-formal education from the point of view of lifelong learning, by encouraging an integrated approach to analysing and learning about the problems of the environment and sustainable development”.
Romania	Presidency of the 19th session of the UN Commission for Sustainable Development	Development of the green business market
	“Green Entrepreneurship” Program	Aiming to promote a model of economic development for regions with untapped economic potential and a tradition of stewardship of natural and cultural resources
	National Sustainable Development Strategy Romania 2020-2030	Promoting green entrepreneurship and a green economy, informing about the positive effects of implementing pro-environmental solutions.
	the Romanian National Climate Change Strategy 2013-2020	
	Climate Change and Low Carbon Green Growth Program	
	National Strategy for Competitiveness 2014-2020	
	National Strategy for Waste Management (SNGD) 2014-2020	
	National Energy Strategy 2015-2035	
National Rural Development Programme for 2014-2020		
Norway	„Green and genius” and „Energy for the future” programs	Promotion of green development and green entrepreneurship among students;
	NOU 2015: 8 reports	Promotion of entrepreneurship;
Greece	„Green Strategy”	One pillar of the government’s green strategy is restructuring agricultural production towards ecologically friendly methods (for example, promotion of crops which require less water and other natural resources), biological products and broader opportunities for “green entrepreneurship”. Implementing a green strategy of primary sector development means increasing the chances of obtaining EU agricultural funding after 2013. A green strategy is to promote effective waste management as a priority. The green strategy includes promotion of efficient waste management as a priority. “Green infrastructures” are aimed at increasing reliance on environmentally-friendly transport.
	Establishment of a separate Ministry of the Environment, Energy and Climate Change	
Latvia	National Development Plan 2020	Providing welfare and ensuring sustainable development to the Latvian population by 2020 and achieving an average GDP growth of at least 5%.; preservation of natural capital as a base for sustainable economic growth which should contribute to its sustainable use
	Sustainable Development Strategy of Latvia until 2030	Within the framework of the strategy two priorities are pursued: green economy and green entrepreneurship.

most appropriate definition of this phenomenon is that it is a profitable and innovative entrepreneurial activity that aims to make positive use of its impact on society, the economy and the environment. This type of entrepreneurial activity can take place in different types of organisations, such as start-ups, social enterprises, public institutions, well-established SMEs and local or international corporations [15].

In economic practice, however, entrepreneurs who run their businesses in harmony with the principles of sustainable development often struggle to survive because of poor involvement of the public sector in supporting the sector’s entrepreneurs. An individual approach of local and regional authorities to entrepre-

neurs is needed, as green entrepreneurs constitute a very heterogeneous group with different motivations and strategic objectives, combining various financial and environmental motivations. New firms created or run by green entrepreneurs often exploit opportunities that have been neglected by other firms and are the driving force of radical ecological innovations. Green entrepreneurship is therefore an activity focused on conscious solving of environmental and social problems.

Development of green entrepreneurship in selected European countries

The approach to green entrepreneurship in developed and developing countries

is different. Developed countries and international organisations seem to place more emphasis on the concept of “green” and on market opportunities, while developing countries seem to focus more on the concept of “entrepreneurship” and on market needs [16] (see **Table 1**).

Green entrepreneurship in Bulgaria is perceived through the prism of activities that support the green economy. It promotes the creation of innovative and effective ideas for future economic development. In Bulgaria, this term refers to all types of entrepreneurial initiatives related to reducing the negative impact of human activities on the environment as well as to the production of bioproducts. The concept of green entrepreneurship in Romania is relatively new. Economic

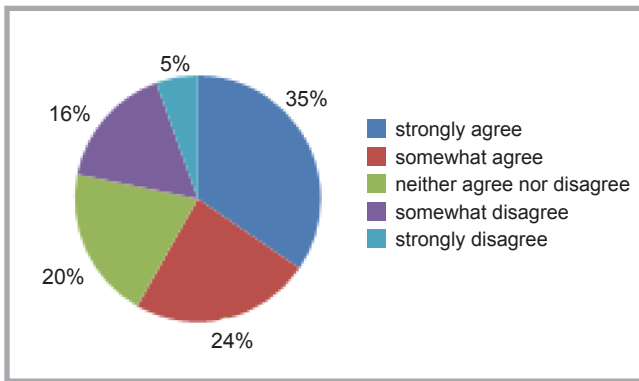


Figure 1. Do you think the textile industry can have a negative impact on the environment? **Source:** Own elaboration based on respondents' answers.

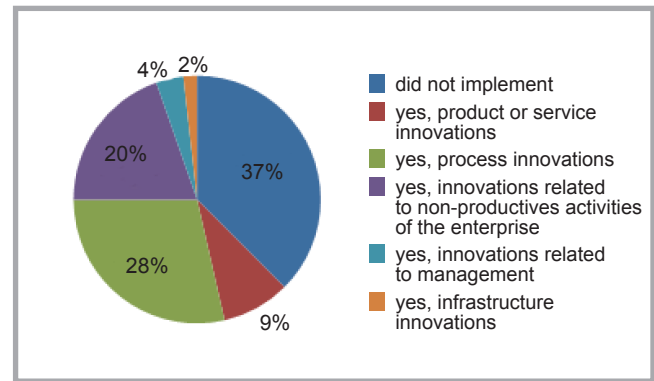


Figure 2. Have you implemented eco-innovations in your enterprise within the last 3 years? **Source:** Own elaboration based on respondents' answers.

practice as well as literature of the subject describe this phenomenon only to a small extent. It is not well-developed there and it does not have a good basis for development. Although many green activities are undertaken in Romania in order to protect the environment and use natural resources in a rational way, these activities do not have an impact on entrepreneurship. There is no single universal definition of green entrepreneurship in Romania.

Greece is one of the few countries in which green entrepreneurship has a strong growth potential. Approximately 25% of the EU funds earmarked for Greece for the period 2007-2013 was allocated to ecological investments. Greece's own environmental spending accounts for less than 1% of GDP, which is very low compared to OECD or EU countries. Opportunities for the development of green entrepreneurship in Greece have not been used.

Latvia is the second greenest country in the world (with Switzerland taking the 1st place). The country has a large potential of renewable energy sources and a high percentage of bio-certified agricultural land, forests and other natural resources. One of the biggest barriers to green economic development in Latvia is lack of laws and regulations for citizens, businesses and public institutions that would encourage them to develop a green economy [18].

Based on the table above, it can be concluded that the idea of green entrepreneurship is present in the strategic documents of the European Union Member States and that it is expected to expand significantly in the next few years. However, with regard to the textile industry,

Hall and Williams point out in their studies that highly competitive sectors are obliged to innovate in order to keep up with competition, and hence the idea of green entrepreneurship and eco-innovation can be an opportunity for the growth for this sector in the European Union. According to the researchers, enterprises operating in the global economic reality have to be managed in three dimensions: economic, social and environmental [19]. All these factors have a positive impact on the enterprise's performance as they contribute to cost reduction and quality improvement as well as increase the value of enterprise [20].

Green (or ecological) entrepreneurship is therefore closely related to the textile sector, which should be particularly interested in the introduction of various types of eco-innovations that reduce or prevent negative environmental impact and at the same time contribute to the achievement of competitive advantage and profitability. The textile sector is characterised by focus on sustainability issues – both in terms of environmental protection and global social responsibility. Consumers are increasingly aware of the impact of a given activity on the environment, and individual industrial markets attract innovations.

■ Research methodology

This research paper concentrates on the analysis of green entrepreneurship, and therefore its first part is based primarily on secondary data, collected scientific journals, leading magazines, websites and government reports. The second part deals with the prospects for the development of green entrepreneurship in Poland and the verification of an entrepreneur's knowledge about the development

of this phenomenon. For this purpose, 56 enterprises operating in the textile industry from all over Poland were surveyed from March to September 2017 on the basis of an on-line survey questionnaire¹⁾. Selection of the sample was random¹⁾. In order to conduct the survey, a database was prepared with up-to-date data on active Polish enterprises included in the REGON register, for which the code of the predominant activity according to the Polish Classification of Activities (PKD) 2007 is C division 13 (Manufacture of textiles).

Selection of the textile sector in order to analyse prospects for the development of green entrepreneurship was justified for several reasons. The European textile industry is becoming increasingly innovative and competitive, playing a significant role in economic development. In the context of competition from low-cost countries such as China and India, the concentration of European manufacturers operating in the industry on quality, pursuit of progressive trends and meeting ever-increasing customer expectations translates into growing economic value. Therefore there is a clear interest of the Member States and EU candidate countries in strengthening the industry on a European and even global scale. Under the Horizon 2020 program, funding is provided for projects related to the development of the textile market. Actions in this area concern issues such as the circular economy or smart technical textiles [21].

■ Prospects for the development of green entrepreneurship in Poland. Results of own research

The textile sector is an important branch of both Polish and European economies.

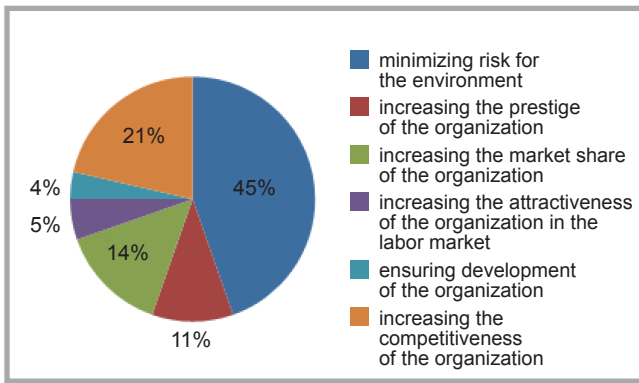


Figure 3. What is in your opinion the main goal of introducing eco-innovations in textile enterprises? **Source:** Own elaboration based on respondents' answers.

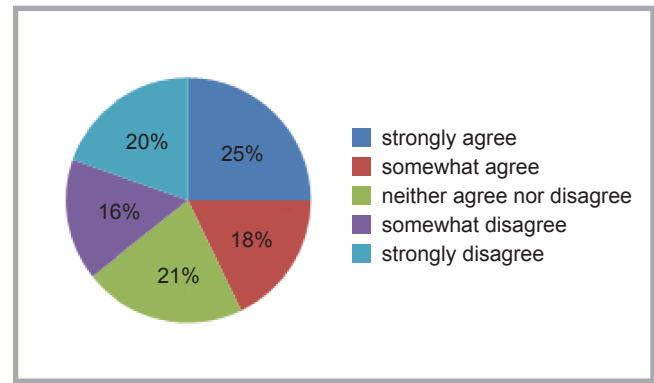


Figure 4. Please comment on the statement: "The introduction of environmental solutions in the textile industry reduces the cost it operations". **Source:** Own elaboration based on respondents' answers.

The latest data from the Central Statistical Office indicate that as of September 30th, 2017, there were 10,230 textile enterprises in the private sector in Poland, i.e. about 0.25% of the total number of enterprises and about 2.8% more than in the corresponding period of 2016. Textile factories are located mainly (60% of them) in five voivodships: Łódzkie, Wielkopolskie, Dolnośląskie, Śląskie and Kujawsko-pomorskie [22].

The questionnaire survey concerned the preference of Polish textile entrepreneurs in terms of introducing environmental solutions and their opinions on the main constraints of the development of green entrepreneurship in this sector. For this purpose, 8 questions were asked.

Textile industry enterprises belong to the downstream users of the chemical industry, and therefore they use significant amounts of diverse chemicals, including those classified as hazardous. Respondents point out that they are aware of environmental hazards, 35% of whom strongly agreed that the activities of textile enterprises may have a negative impact on the environment and 24% somewhat agreed with this statement, while only 5% strongly disagreed, claiming that this activity has no negative impact on the environment (**Figure 1**).

The development of the textile industry depends on the implementation of innovations. In this sector's enterprises innovation means not only developing and implementing new technologies, but also the successful transfer of new ideas, opportunities for market success for new enterprises, changing the routine in this industry, external contacts and marketing. Despite the fact that innovations are the precondition for the development

and expansion of the textile market, as many as 37% of respondents answered that they had not introduced any innovative solutions within the past three years. Among the rest of entrepreneurs who confirmed the introduction of innovative solutions, those who had introduced process innovations were dominant (28%), followed by those who had conducted non-productive innovative activities (20%). Entrepreneurs showed no interest in process and infrastructure innovations. One of the reasons for the low level of interest in developing innovations in the textile sector may be limited resources for investment in this area (**Figure 2**).

The responses confirmed that textile industry entrepreneurs are not only aware of environmental hazards resulting from the physicochemical properties of materials used in textile production but also of the importance of introducing eco-innovations. As many as 45% of respondents said that the overriding goal of implementing such innovations should be to minimise environmental hazards. Only 21% of the respondents pointed to the internal goals of the organisation, such as increasing the enterprise's competitive-

ness (21%) or increasing the prestige of the organization (11%) (**Figure 3**).

The introduction of innovations is often motivated by their positive impact on business performance, cost reduction, quality improvement, or the enhancement of the value of the firm. The respondents gave no clear answer to the question about the impact of eco-innovations on cost reduction in the enterprise. As many as 25% of respondents strongly agreed with the statement, while 20% strongly disagreed. The varying answers of the entrepreneurs surveyed may be a result of the different characteristics of activity or different experiences connected with the introduction of ecological solutions (**Figure 4**).

Referring to the previous studies of Farinelli and Bottini, entrepreneurs were asked about the most important characteristics that should describe green entrepreneurs, that is those who introduce innovations in the textile sector in the area of broadly understood ecology. As many as 49% of the respondents pointed to the motivation of entrepreneurs to create behaviors that show their concern

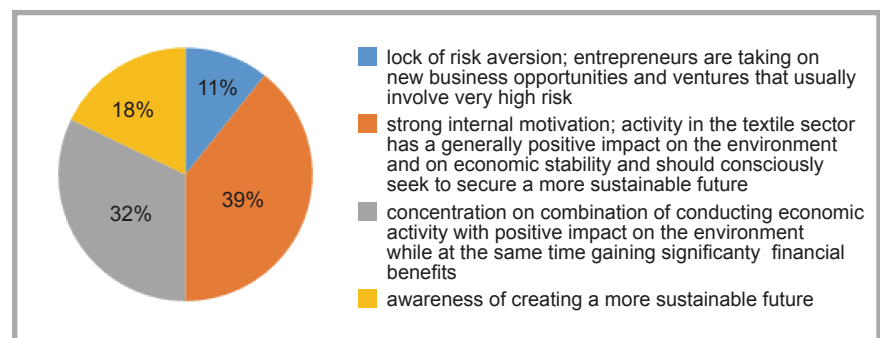


Figure 5. Please select from the set of features presented the one which according to you should characterize a green entrepreneur functioning in the textile sector in the EU. **Source:** Own elaboration based on respondents' answers.

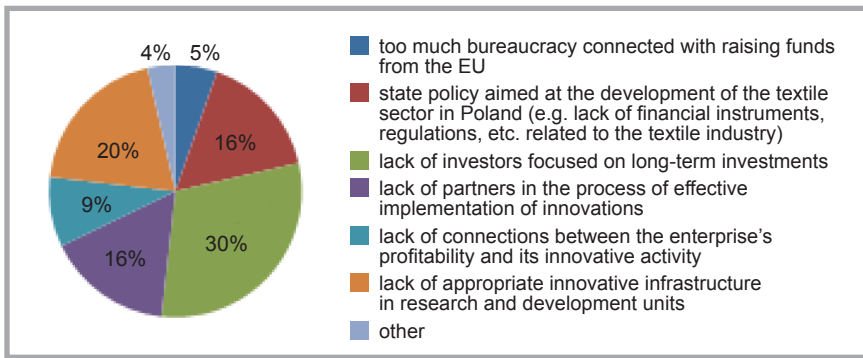


Figure 6. What do you think are the main constraints to the development of green (ecological) entrepreneurship in textile sector enterprises in the Polish economic reality? **Source:** Own elaboration based on respondents' answers.



Figure 7. Which of the following would encourage you to implement a green (ecological) entrepreneurial approach in your enterprise? **Source:** Own elaboration based on respondents' answers.

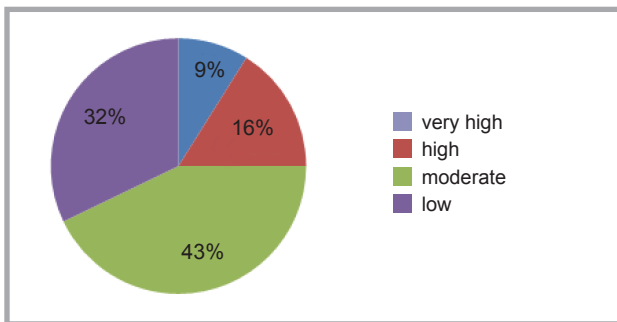


Figure 8. How do you rate the prospects for the development of green (ecological) entrepreneurship in the textile sector in Poland? **Source:** Own elaboration based on respondents' answers.

about the environment and sustainable development. More than 30% of the respondents emphasised that a green entrepreneur in the textile sector is one who focuses on combining business with a positive impact on the environment, while gaining significant financial benefits. Clearly over $\frac{3}{4}$ of respondents define a green entrepreneur acting in the textile industry as the one who wants to achieve both environmental and economic goals and to transform this sector into a more sustainable one (**Figure 5**).

One of the most important stages of the survey was asking the question about constraints for the development of green

entrepreneurship in the Polish economic reality. The data show that the biggest obstacle for entrepreneurs is the lack of investors focused on long-term investments in the textile industry (30%). Another important limitation is the lack of innovative equipment in research and development units (20%), which effectively limits the creation of an attractive service and consulting offer for enterprises, as well as the government's ineffective policy towards the textile sector (16%). The data show that entrepreneurs, despite their interest in implementing innovations, face problems they are not always able to cope with and overcome (**Figure 6**).

Entrepreneurs who decide to introduce innovations always expect benefits, but it is important to remember that motivation to develop innovations in enterprises should be based on the argument of long-term development rather than on one-off benefits. Entrepreneurs asked about incentives which convinced them to introduce the principles of green entrepreneurship indicated financial incentives (39%). A significant group of respondents (29%) emphasized that they would be encouraged by various training sessions or conferences which would increase the respondents' awareness of the costs and benefits of implementing eco-innovations (**Figure 7**).

The last question was related to entrepreneurs' views on the prospects for the development of green entrepreneurship in the textile sector in Poland. The majority of respondents answered that the development opportunities of this phenomenon are small and moderate (32% and 43%). Only 9% of respondents replied that prospects for the development of this phenomenon in the Polish textile sector are very high (**Figure 8**).

Conclusions

The concepts of innovation in the textile sector should be extended in a holistic way and include innovations related to the environment and sustainable development, thus building a "link" between ecological and economic awareness, which is referred to in the literature as green entrepreneurship. The survey conducted in 56 Polish textile enterprises indicates that they are interested in implementing all kinds of eco-innovations concentrated in the so-called environmental management system, which should become part of any organization in the sector analyzed. Environmental innovations should require improvement of environmental management methods, especially of supply chain management and sustainability. Managers should improve their skills in the area of modification of processes in accordance with the requirements of Corporate Social Responsibility (CSR) and quality, and build foundations of customer trust that would let them know that their products are manufactured with minimal negative impact on the environment.

Entrepreneurs participating in the survey strongly emphasised that the current eco-

logical innovativeness of this sector is due to numerous barriers resulting from the unfavorable macroeconomic environment in correlation with a lack of incentives for introducing such solutions. The results of the study show that achieving financial benefits from eco-innovations is not obvious (the answers are not unambiguous), and thus their implementation should be based on a system of specially designed incentives for textile entrepreneurs and a program of support for innovative actions which should be related to scientific research, assistance as well as technical and financial support in the entire process of implementing and monitoring innovations in the textile sector.



Editorial note

1) It consists in the direct and unlimited selection of test subjects for a statistical sample directly from the general population and without restrictions. In the presented study, the general population were enterprises from the textile sector.

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