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STIMULANTS AND BARRIERS IN THE INNOVATIVE ACTIVITY OF THE EDUCATIONAL FARMS IN POLAND¹

Summary

Purpose – The aim of the study is to indicate the main determinants and barriers that affect the innovative activity of educational farms located in the rural areas of Poland. A review of domestic and foreign literature and a survey conducted among the described entities helped to achieve this goal.

Research method – The first part of the article discusses the literature on the multifunctionality of agriculture. The second part deals with the subject of innovation and describes educational farms located in the rural areas of Poland and their activities in the context of innovation. The third part is devoted to empirical research based on the analysis of questionnaires.

Results – The conducted analysis of available materials proves that the examined entities show activity in all areas of innovation, however, they define it to a different degree.

Originality / value / implications / recommendations - The article implies the need to work on harmonizing the definition of innovation, as it is still perceived by many respondents as a process of modification of production factors closely related to technological innovation.

Keywords: educational farms, innovations

JEL Classification: A1, D0, I2

1. Introduction

The idea of the multifunctionality of agriculture has been functioning in Western Europe for many years. In Poland this concept began to function as late as in the 1980s. Since that time, the sector of agriculture has undergone many transformations. The withdrawal from the monofunctional agriculture which had been based on the production of agricultural raw materials [Kłodziński, Rosner, 1997, p. 137] began and multifunctionality became more popular. This concept means the efficient integration of entirely new non-agricultural functions in the rural space [Wilkin, 2008, pp. 9-20]. The multifunctionality of rural areas is considered as the

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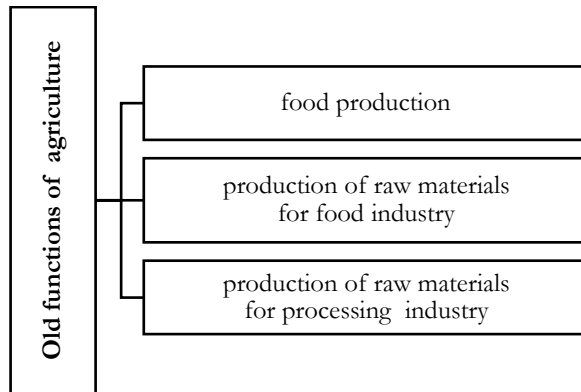
main method of their activation, which implies undertaking various forms of economic activity of non-agricultural character that create additional work places [Pacione, 1986, pp. 36-60; Bowler, 1992; Skawińska, 1994; Duczkowska-Malysz, 1998; Tarrant, 2000; Czudec, 2009]. One of the forms of non-agricultural activity are, among others, educational farms. Out-of-school education in rural areas is organized in many countries. The most advanced networks are created in France, Switzerland, Austria, Italy and Germany. There are numerous studies concerning non-agricultural forms of entrepreneurship in rural areas; they include: Halfacree [1997], Woods [2005], Idziak [2008], Kmita-Dziasek [2011] and Drobnik [*Urban resilience...*, 2014]. However, the subject related to the educational function of economic entities in the countryside is still rarely present in the subject literature. Wilkin [2008, pp. 9-20] divides agriculture functions into two groups: the commercial and non-commercial ones. Non-commercial functions of agriculture include, among others, the production of foodstuffs for the farms' own needs. Wilkin classifies public goods produced in agriculture as the environmental goods (biodiversity, landscape with agriculture, the conservation of soils, proper water relations) and economic goods (food safety and energy safety), and also as socio-cultural goods (economic and social life of the countryside, the enrichment of the national culture and the shaping of both local and regional identity) [Wilkin, 2010, pp. 42-48].

In the whole world, the decreasing importance of agriculture viewed as the basis of economic existence and the only place for countryside population to be employed contributed to the fact that the European Model of Agriculture was based on the paradigm of multifunctionality [Woods, 2005; van Huylenbroeck et al., 2007; Czudec, 2009]. The present model is also included in the concept of sustainable development of the countryside [Wilkin, 2010, pp. 25-28]. This scheme is based on two concepts, i.e. multifunctional development of rural areas and multifunctional agriculture. Charts 1 and 2 present two models of agriculture: the old one and the new one. The old model of agriculture is based solely on its basic functions. The new model of agriculture defines in detail the multifunctionality of the countryside and rural areas. Additionally, this model includes an innovative function which will be analysed in further detail – the hybridization of the cultural identity of the countryside and education. This function is connected with the development of rural cultural traditions that constitute the essence of the local and regional identity.

The paper is aimed at drawing the reader's attention to the additional functions of agriculture which are frequently overlooked in the literature, although they concern education and the cultural identity of the countryside. These functions adopt the commercial form of educational farms. The multifunctionality of rural areas and agriculture is undoubtedly the determinant of adding dynamics to the employment in non-agricultural activity which creates innovative activities of the entities.

CHART 1

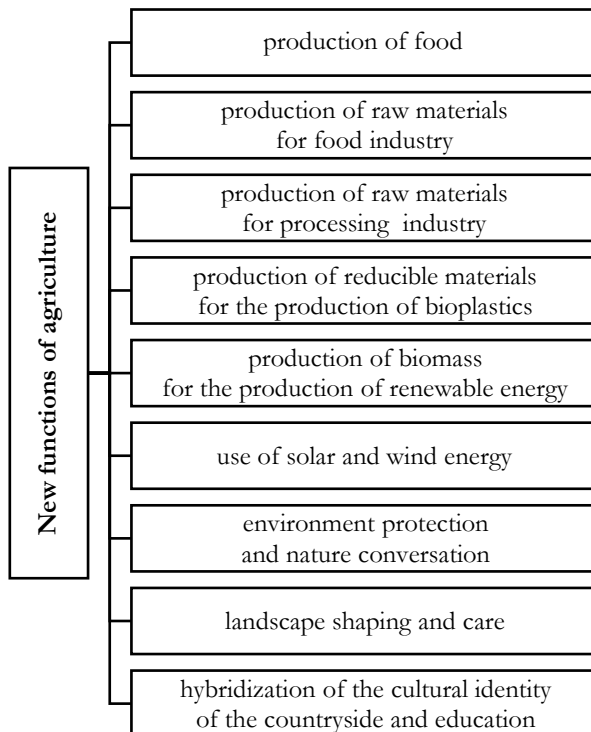
Old functions of agriculture and rural areas



Source: author's own elaboration based on: [Otoliński, Wielicki, 2003, p. 109].

CHART 2

New functions of agriculture and rural areas



Source: author's own elaboration based on: [Otoliński, Wielicki, 2003, p. 109].

The selection of this particular subject resulted from the possibility of the more in-depth, empirical analysis of the subject. This topic is particularly interesting in the light of the issues connected with the innovative character of economy in Poland. Owing to the evolution of markets towards knowledge-based economy, innovation is becoming the key subject of economics [Welfe, 2006, pp. 46-58]. The changes in the global economy point at the shift from the economy of material-absorbing type towards knowledge absorbing economy which is based on the innovation potential [Szał, Zdanio, 2004, p. 98].

The aim of the paper is to analyse the determinants and barriers of innovation in the educational activity of the entities (educational farms) located in the rural areas of Poland. The study comprises 16 voivodeships of Poland – they were the location of educational farms which were active in the years 2011-2018. The methods used for the achievement of the research goal included: the analysis of literature and statistic data as well as the survey research.

2. The definition of innovation and its classifications

The definition of an innovation has a very general character. According to Schumpeter [1960] innovations are connected with obtaining a new source of raw materials, the introduction of new goods and a new production method as well as with the opening of a new market. A similar approach to innovations was adopted by Mansfield [1968] and Freeman [1982] who perceived it as the implementation of new, considerably improved products. Drucker's [1992, pp. 15-35] definition of *innovation* concentrates on the change that creates the possibility to start economic activity or provide new services. In 2018 a new definition of an innovation was created in the Oslo Manual - an innovation was defined as "the introduction of an entirely new or considerably improved product (good or service) or process (or the combination of them) which largely differs from the previous products or processes of the entity." It means that the initiatives that are new on the world scale as well on the micro scale on the domestic market and in the company are considered as innovations. The Oslo Manual deliberately resigns from the requirement of the absolute novelty on the scale of global economy. Apparently, this approach is considerably less rigorous than the earlier interpretations of this concept.

Table 1 presents the review of some definitions of an innovation taking into consideration the changes of this concept. The juxtaposition shows that, despite certain differences in the concept's interpretation, one may observe common features of this concept. Therefore, an innovation may be defined as the change that improves something, gives the new quality or facilitates the creation of a new product or service.

TABLE 1

Definitions of the term “innovation”

Authors	Definition
J.A. Schumpeter [1960]	Starting production of new or the improvement of the already existing goods. The elaboration of new manufacturing methods; creation of a new market; the application of a new form of sale or shopping; the application of new raw materials; the use of new organization of processes.
P.F. Drucker [1968]	Introduction of changes, new ways of using a product, service, marketing, organization and management methods.
E. Mansfield [1968], Ch. Freeman [1982]	Implementation of new or considerably upgraded products/services. The commercial use of a product, service or device.
Oslo Manual [2018]	Implementation of products/services or processes or the combination of them which are new or considerably upgraded for an entity.

Source: author’s own elaboration.

Over the years the process of innovations has gained new meaning and there occurred changes in the typology and classifications of the term. Until 2018 there existed several isolated types of innovations: product, process, marketing and organization innovations [Drucker, 1968; Gomulka, 1998; Soete, 2006]. In practice, it was extremely difficult to analyse innovations on the basis of solely one classification because the solutions introduced in enterprises frequently belonged to several categories. In order to solve this problem, in 2018 a new division of innovations was created. The fourth edition of the Oslo Manual [2018] limits the previously adopted types of innovations and introduces:

- *product innovations* referring to producing and introducing on the market new or upgraded goods or services that considerably differ from the previous creations of this entity,
- *business process innovations* that denote a new or improved business process (for one or more business functions) that considerably differs from the previous creations of this entity.

Additionally, there can be observed the tendency to step away from the traditional way of understanding an innovation as the process directed at new technologies. Moreover, innovations are more frequently spotted in terms of organizational and social solutions [Dolińska, 2010, pp. 15-25; Kalinowski, 2010, pp. 13-32].

3. Innovation activity of educational farms in Poland

The studies of the subject literature and the analysis of the statistic data enabled to identify 250 Educational Farms in Poland. The location and the list of farms are presented in chart 3.

CHART 3

The quantity set of educational farms in Poland (September 2019)



Source: author's own elaboration based on: [www 1; www 2].

The studies presented below included the quantity approach based on the analysis of the data from the Agricultural Advisory Centres as well as the original data obtained as the result of the survey research.

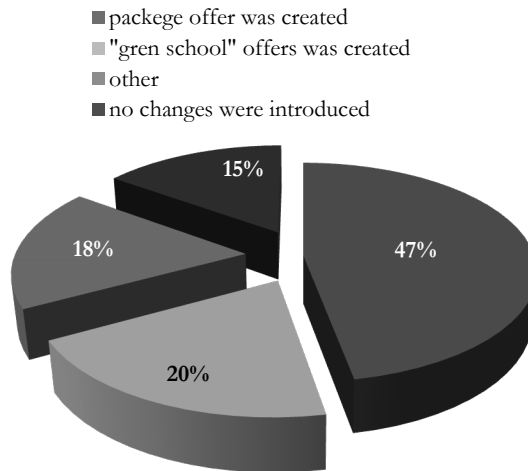
The initial survey research was conducted in December 2018 during the 5th Meeting of Educational Farms in Krakow, using the sample of 190 entities that were involved in education in rural areas in Poland. In order to conduct the study, the author's questionnaire was used. The aim of the study was to analyse and assess the innovation level of the entities involved in education in rural areas as well as to define the determinants and barriers of innovation activity of these entities.

The theoretical basis of the conducted research included, among others, the publications concerning innovations and the theory of entrepreneurship. The literature studies comprised scientific publications and popular scientific books published in Polish and English language. The literature studies contributed to the understanding and analysis of the approaches of scientists that analysed this subject, among others: Mulgan [2006], Mulgan et al. [2007], Kmita-Dziasek [2011], Kmita-Dziasek and Bogusz [2015]. Meanwhile, the results of the conducted research indicate that all the owners of educational farms are aware of the innovation processes in their enterprises and understand the essence of innovation and its impact on the development of economic activity in a different way.

The initial survey study showed that as many as 85% of the 190 analysed educational farms introduced innovations of a product, process, organization, and marketing type in their objects. Among them as many as 47% declared the creation of packages for educational services. So far 20% of the entities have created the offer of the so-called “green school”, while 18% introduced other non-defined innovations related to either product or service, e.g. training lessons away from schools (chart 4).

CHART 4

The types of offers/services introduced in an enterprise over the last 3 years of conducting activity



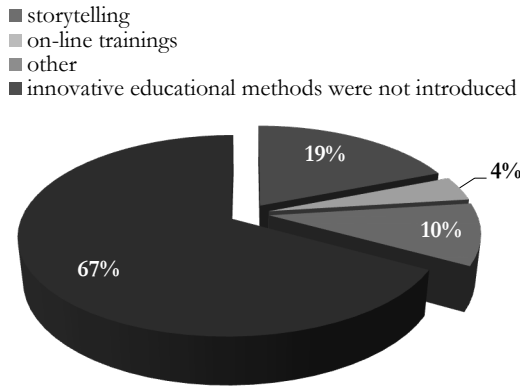
Source: author's own elaboration based on the results of the survey research.

More than 30% of the educational farms classified in the survey introduced in their offers, among others: storytelling, online trainings and other non-defined methods. The survey implies that the type of social innovations is not fully used in the analysed entities, which ensures considerable development possibilities in this sphere (chart 5).

Although the analysed entities conduct their activity related to educational services, it is possible to notice their innovations of business processes which are usually wrongly associated only with methods in the production process [Pomykalski, 2001]. Innovations of business processes imply the implementation of either a new or a considerably improved method of providing a product or service. 69% of the analysed entities introduced new distribution ways into their activity, whereas 37% of the analysed entities declared the introduction of the offer based on cooperation with other external entities, e.g. with other educational farms, theme villages or eco-museums. Meanwhile 27% of the entities provided services (chart 6).

CHART 5

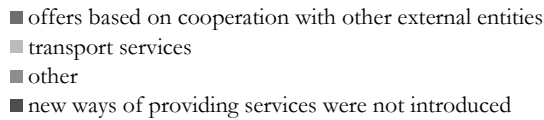
Types of innovative educational methods introduced into the enterprise's offer



Source: author's own elaboration based on the results of the survey research.

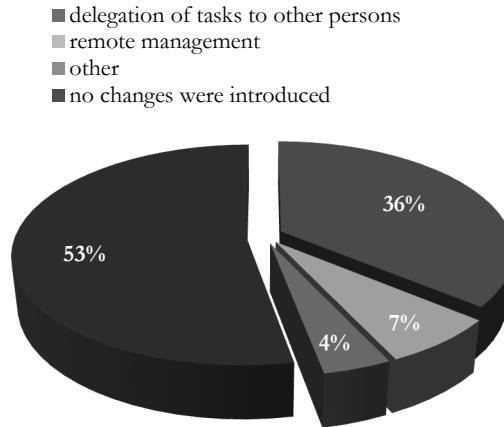
CHART 6

Types of new ways of providing services



Source: author's own elaboration based on the results of the survey research.

Less than 50% of the entities introduced changes in the manner of enterprises management, e.g. the delegation of tasks to other employees (36%) and remote management of an object (7%), or other (4%). A considerable part (53% of the analysed entities) did not introduce changes in the sphere of organization innovations (chart 7).

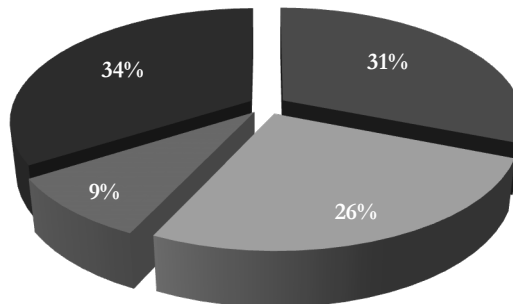
CHART 7**Types of changes introduced in the manner of enterprise management**

Source: author's own elaboration based on the results of the survey research.

The direct sale in schools and kindergartens was reported by 31% entities. 26% of the analysed respondents declared that the sale of their offer takes place by using the external reservations system. Only 34% of the entities still have not introduced any changes in the way of either sale or distribution of their offer (chart 8).

CHART 8**The list of changes in the manner of sale/distribution of the offer**

- direct sale (organization of workshops) in schools and kindergartens
- offer sale through the external reservations system
- other
- not introduced any changes



Source: author's own elaboration based on the results of the survey research.

The synthetic set of the survey research results was presented in table 2. It shows that the majority of entities declared their activity in the sphere of innovation of a product and service. Another active sphere of innovation includes social innovations which aim at improving the quality of life of the inhabitants of villages. These innovations create new social and partnership relations based on cooperation to a large degree. Additionally, respondents appeared to be active in the sphere of innovations of business processes.

TABLE 2

Types of declared innovations in particular areas of influence

The area of influence	Product innovations	Innovations of business processes (technological)	Innovations of business processes (organizational)	Innovations of business processes (marketing.)	Social innovations
Introduction of a new offer	52				
Introduction of a new educational method					47
Introduction of a new way of providing services		14			
Introduction of change in the management manner			25		
Introduction of change in the manner of sale/distribution				39	

Source: author's own elaboration based on the results of the survey research.

3. Stimulants and barriers of innovation activity of educational farms

The conditionings of innovation processes specify the impact and efficiency of the stimulating factors as well as barriers in the innovation activity of the entities. Table 3 presents factors while taking into consideration exogenous and endogenous conditionings of educational farms as well as the destimulants of development.

TABLE 3

**Determinants and barriers that condition the innovation activity
of educational farms**

Exogenous conditionings of an enterprise		Endogenous conditionings of an enterprise	Barriers hindering innovation	
on the macro scale	on the micro scale		exogenous	endogenous
Economic ones; the realization of the EU innovation policy, including the external sources of financing innovations, science, research and development.	The shaping of the innovation surrounding the development of innovation infrastructure (science and technology parks, etc)	Knowledge resources and competences of enterprises employees as well as the effectiveness of using these resources for the needs of innovations.	The lack of long-term strategy of economic growth.	Related to cost, the lack of funds for innovations activity.
Socio-cultural	Needs and preferences of customers.		Small outlays on R&D and education.	
Legislative, facilitating the innovation development of enterprises, concerning taxes, financing research and development and environment protection.	Innovativeness of competitors.	IT systems and databases.	The lack of activity of R&D units in the commercialization of the results of research work.	The lack of satisfactory knowledge concerning innovations and no possibility of supporting innovative activity.
The development of technique/ technology	Short life cycles of products. Their multifunctionality.	Own laboratories and their equipment.	Lowmarket demand for technological innovations.	
	Activation of social capital in the sphere of innovations.	Conducting market analyses and marketing research for innovation needs.		
		Innovation-related culture within an enterprise that promotes the introduction of changes.		

Source: author's own elaboration based on: [Dolińska, 2010, s.22-34; Okoń-Horodyńska, 2004, pp. 141-163; Oslo Manual, 2005].

The determinants of innovation processes specify the impact and efficiency of factors that stimulate or hamper innovative activity of enterprises. The determinants of innovative activity of educational farms vary depending on the size of the enterprises, the level of innovation awareness of the farm's owner and on the financial possibilities of the entity. Innovative processes initiated in educational farms are the resultant of both endogenous and exogenous conditionings and factors.

The internal conditionings include, among others: human resources, capital resources, material resources, management system and organizational culture in the enterprise. The external factors include among others: state innovation policy, the state of economic prosperity, education system, etc. Proper relations between the surrounding's macro and micro factors have impact on the increased innovation activity of the entities [Dolińska, 2010, pp. 22-34]. It is worth studying the degree of impact of the aforementioned stimulants and barriers, thanks to which it is possible to eliminate the limitations affecting the innovativeness of enterprises. Additionally, it is easier to observe the factors determining their innovation activity. The shaping of proper relations based on the consistency of factors both on the macro and micro scale as well as the internal conditionings of the enterprise affect the rate of the development of innovations on educational farms.

4. Conclusions

The aim of the paper was to isolate the main determinants and barriers that have impact on the innovative activity of educational farms located in the rural areas of Poland. The review of literature and the conducted research on the described entities showed that the most important barrier for the innovation of educational farms is the low tendency to innovate, which results mainly from the lack of knowledge, experience and financial possibilities. The factors that determine the innovative activity of educational farms include, among others: the needs and preferences of customers, competence of employees and the willingness to achieve competitive advantage on the market of educational services. The analysed educational farms undertake innovative activities in an active way by cooperating mainly with companies from the same branch, while more seldom with research and development units.

The study results enable to formulate of the following conclusions:

1. Educational farms in Poland demonstrate activity in all the innovation types: innovations of a product/service and innovations of business processes (including organizational and marketing ones) as well as social innovations.
2. The analysed entities define innovations in different ways. The concept of innovation is perceived by many respondents as the process of modifying production factors closely linked with technological innovation.

Ultimately, it should be stated that in order to maintain competitive advantage on the market, educational farms ought to be flexible in creating changes and adjusting their activity to the constantly changing market surroundings.

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