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Innovativeness of Young Farmers Based on Farms in the Wielkopolskie Province

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Abstract. Introduction of innovations on farms is a crucial issue, it is a measure of progress, it provides a competitive advantage and makes it possible to increase revenue from agricultural production. The primary aim of this study was to identify innovative activity of young farmers, as well as their attitude to changes implemented on farms. The nonprobability sampling of the population was used and opinions of farmers were collected using the questionnaire survey method. Among the farmer respondents the predominant groups comprised individuals in favour of changes, expecting verified innovations and relying on the opinions of others. Young farmers indicated the Internet as well as television and the radio as the primary sources used when searching for new solutions. Innovations were introduced most frequently in plant production.

Keywords: Innovations, Young Farmers, Farms, Information Sources.

1 Introduction

Innovations on farms are necessary when facing the contemporary market requirements. Innovativeness may significantly affect improvement in productivity and increase competitiveness of the agricultural sector, as well as promote improved quality of agricultural products. Implementation of new technological and biological solutions or innovative ideas provides a chance to increase efficiency and reduce production costs while increasing revenue from agricultural production.

Literature on the subject presents numerous definitions and concepts of innovations. In 1912 a definition of innovations in relation to economy was formulated for the first time by Schumpeter, who saw it as "a change in the function of production of considerable scope", consisting in the "combination, i.e. association of means of production" differing from that used previously, thus disturbing the current state of equilibrium [18]. He added further nuance to the concept of innovation - defined as any addition to the existing body of technical knowledge or know-how that results in an outward shift of the production function and a downward shift of the associated cost curves - by distinguishing between product, process, and organizational innovation [2, 17]. In turn, Drucker [3] defined innovations as "a change in the product design, marketing method, offered price, service provided to the customer or a change in the organisation and in management methods, which affects all spheres of enterprise

activity". In the opinion of Rogers [15] and Kotler [8] an innovation is any good perceived as a novelty by others. According to Niedzielski et al. [13], an innovation is "a purposeful and organised activity of entrepreneurs searching for practical applications for various new solutions under specific conditions and in a given time period in order to obtain positive economic results, to more effectively satisfy consumer needs and more efficiently utilise available resources". According to the Oslo Manual 2005, "innovations consist in launching of a new or significantly improved product, or application of a new (or modernised) technological process" [10]. Innovation has been identified as one of „the five key drivers of productivity", so it is one of the key determinants of the relative economic performance of rural areas [1].

Innovations in agriculture are defined as new products or production measures, or ideas aiming at an elevation of prestige or those which entice team activity [11]. In turn, Ryznar defined innovations in agriculture as any new idea or concept aiming at rationalisation of production processes, measures adopted on the farm or in the household, as well as any equipment facilitating work or increasing its efficiency, and any product of human activity, model or pattern to follow, or values previously not found on a given farm or in a specific village [16]. Other researchers in their investigations stress the role of consumers in the initiation and implementation of novelties, defining innovations in agriculture based on purposeful changes introduced by farmers to replace current methods of production or products with new, more efficient and useful under specific conditions [9, 11].

In the innovation diffusion process the attitude of individuals managing farms towards changes and novelty is important. The term diffusion of innovation means the process of disseminating a new solution in subsequent implementations. In his studies on diffusion of innovation Rogers [15] showed that the potential attitude of users is a source of success in the implementation of innovations. He distinguished five categories of individuals depending on how fast they introduce changes or implement innovations, i.e. innovators, early adopters, early majority, late majority and laggards. "Pioneers" are daring individuals, risk-takers, by nature interested in new things, but at the same time they get disinterested very fast. Early adopters are pioneers in a given field, being opinion leaders. They consciously take a risk to implement innovations, at the same time expecting greater risks generated by the early adoption of a certain novelty. Members of the group defined as "early majority" are users representing the mass market, they expect verified innovations, they greatly rely on references from other individuals who have already adopted the novelty. They are rather reluctant to accept changes or follow new trends. The "late majority" are skeptical, finding no real advantage in the new solution, with the pressure from the surroundings being the reason to adopt the innovation. The last group comprises "laggers", characterised by their aversion to innovations and for whom it is difficult to overcome their objections.

Thus innovation is a very broad term and refers to all spheres of social, economic and cultural life. This problem is particularly crucial in agriculture, as it has to take into account unique characteristics of this sector. It is connected primarily with modernisation, implementation of changes and improvements within the entire farm, popularisation of novel organisational solutions, enhanced efficiency and productivity,

as well as introduction of new cultivars, application of new pesticides and fertilisers [7, 14, 20].

The aim of this study was to identify innovative activity of young farmers, as well as their attitudes to changes implemented on farms. In this study it was decided to define innovation as any change introduced on farms, which do not necessarily have to be novelties, but rather those introduced for the first time.

2 Material and Methods

In order to realise the proposed aim it was decided to use results of empirical studies conducted from September 2017 to April 2018 on a population of 150 selected farms in the Wielkopolskie province. The study population was based on nonprobability sampling, considering commercial farms providing the primary source of income for the farming family, managed by young farmers, i.e. individuals aged below 40 years. The measurement method was direct interview using a standardised questionnaire. The questionnaire was prepared using closed questions. Questions were also asked using the Likert scale. Collected information was analysed and next described using descriptive statistics methods.

3 Results

The survey involved 43 women and 107 men, with 69 individuals having university education (46%), 42 secondary school education (28%), while 39 respondents had vocational school education (26%). The average size of analysed farms was 9.6 ha agriculturally utilised area.

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Farmers were asked of their attitude to the introduction of changes and novelties on the farm and the questionnaire distinguished five types of attitudes to innovations following the Rogers classification (Fig. 1).

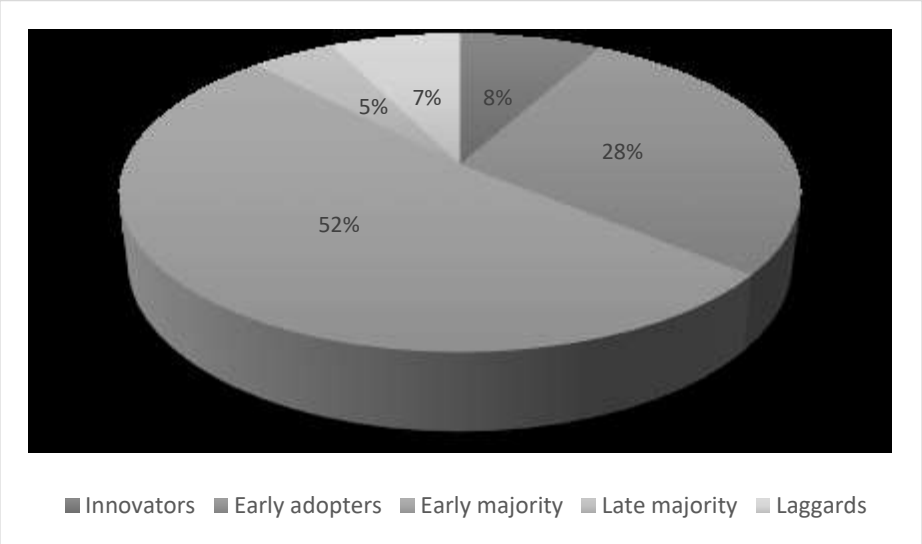

Fig. 1. Farmers' attitudes to the introduction of changes and novelties.

Based on the conducted studies it may be stated that the dominant group among farmers (52%) may be classified as "early majority". These individuals expect verified innovations and they rely on the opinions of others, who have already adopted the novelties. The second large group (28%) comprised individuals which may be termed "early adopters", i.e. individuals who take the risk of introducing innovations, while at the same time expecting greater profits from their early implementation of the novelty. Only 8% respondents considered themselves to be "innovators", i.e. individuals willing to introduce novelties. The smallest group (7%) comprised people who introduce novelties only after they are used by more than half of all users and they are characterised by aversion to innovations [cf. 6].

As shown in the study (Fig. 2), the largest number of innovations was introduced in plant production, i.e. application of new, more efficient machines (85 declarations), fertilisers, pesticides (78) as well as new crop species and cultivars (61). Farmers declared that they are trying to systematically buy new pesticides and fertilisers or introduce new cultivars more resistant to disease, since good yields depend on that. Respondents also invest in the purchase of new machines and equipment for plant production [cf. 3]. Respondents indicated that these changes were possible thanks to EU direct payments, which provides a substantial financial aid to the investigated farms. In the case of animal production the most frequently introduced innovations included modernisation of animal housing facilities (54 respondents) and purchase of new machines and equipment (48). Innovations in terms of farm economics and organisation were related first of all with increased area of farms (57), as well as knowledge (45), e.g. concerning acquisition of EU funds.

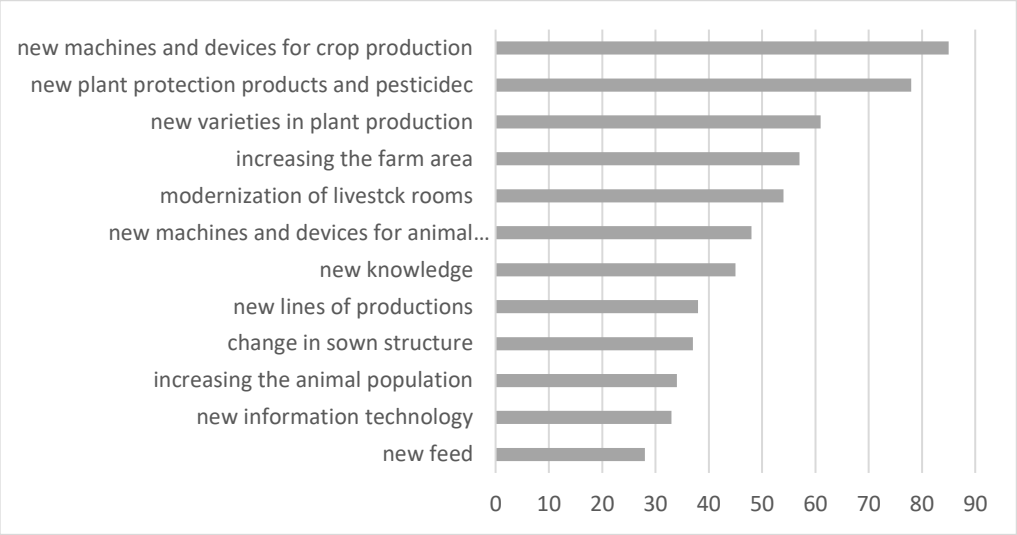

Fig. 2. The number and types of innovations implemented on farms.

Implementation of new solutions requires knowledge on issues related to many fields and search for new solutions. An objective in this study was also to identify the sources of information on novelties in agriculture most frequently used by respondents (Fig. 3).

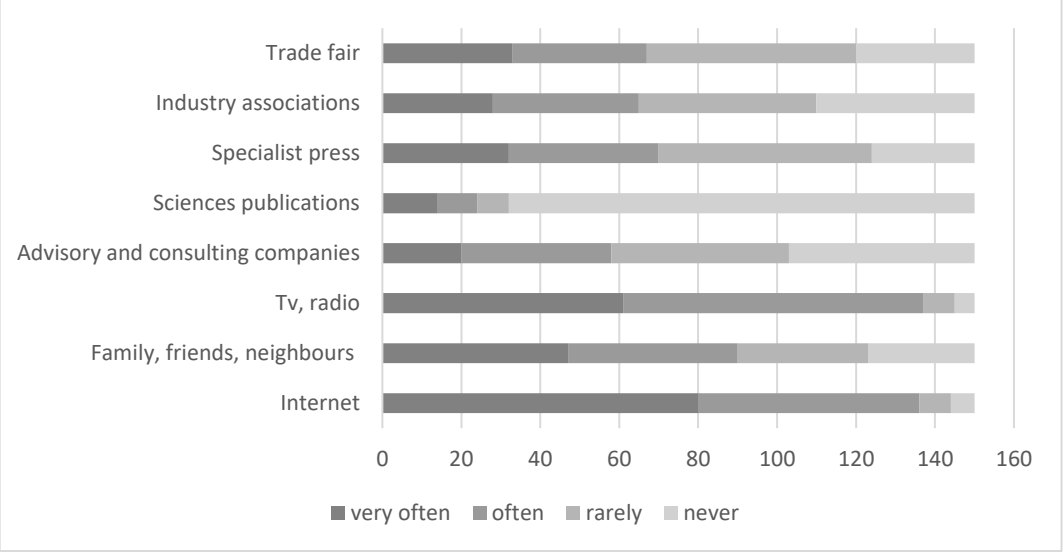

Fig. 3. Sources of information on innovations in the opinion of farmer respondents.

Very often farmers, while looking for information on innovations outside their farms, themselves initiate such changes. Young farmers often consider the Internet and mass

media (TV, radio) to be the best and most important sources of information on new solutions in agriculture. The obtained results confirm the results obtained in the research conducted by Harasim et al. [5] Kalinowski, Prymon [6], Kiełbasa, Puchała [7] and Oreszczyn [19]. The respondents indicated the family, friends and neighbours as those supplying information on innovations to rank as second in importance. In contrast, respondents declared least interest in extension services provided by consulting companies and agencies, professional fairs and scientific publications.

4 Conclusion

Young farmers understand the necessity to introduce changes; however, they show caution and act with deliberation when adopting novelties. When making decisions they consider the references of individuals who have already adopted the novelty as well as analyse pros and cons of implementation of a given innovation. Farm owners most frequently used information on novelties in agriculture from the Internet, mass media (television, radio, press), as well as the family, friends and neighbours. In terms of the structure of introduced innovations the largest number were innovations in plant production, i.e. new cultivars, application of certified seeds, new pesticides as well as new machines and equipment.

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