THE SITUATION OF FAMILY FARMS WITH SPECIAL REGARD TO THE INCLUSION OF EXTERNAL RESOURCES

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Abstract

The aim of our project is to study such farms in Hungary (Nógrád, Heves, Komárom-Esztergom counties) and Slovakia (Nitriansky kraj,Banskobystrický kraj) that mobilize labour and capital for the sake of agricultural production. In our projects we examined the following topics: opportunities of sales in food commerce, taking part in short supply chains and the effect of the legal system change on the operation and development of family farms, especially the impact of the new land act. We introduced and analysed local (county level) and wider (regional level) farming conditions based on secondary data. Moreover, in collaboration with the Hungarian Chamber of Agriculture we obtained information about family farms and other agricultural producers via on-line empirical survey from 2017 to spring 2018. Regarding the composition of the questions both qualitative and quantitative methods have been used. The aim of this project is to answer the following questions: How do and exactly which sources help farmers develop and expand their farms? Which human factors have a role in farming? How do farmers see their own future, what kind of objectives do they have? Who will give up and who will go on producing? It is important to emphasise that the current examination of this paper is a 'snapshot' that intends to represent part of comprehensive research.

Key words: *family farms, human factors, development, farm extension*

1. INTRODUCTION

Seventy-five percent of the world's agricultural area is cultivated by family farms. Their number is high in every country so, consequently, they are responsible for a large part of global agricultural and food production (Lowder et al., 2016). In the case of family farms, it is essential to make a difference between small scale individual farms below 2 hectares and family farms at all regional levels (global, European, national state). While the previous ones are mostly characterised by businesses with a social objective, the latter ones are the cornerstones of production structure. Although there can be some overlapping between these two categories, only 12 percent of the world's total agricultural area is cultivated by small-scale farms. That is why they are likely to have a slighter effect on global food production. The areas cultivated by family farms showed great values consequently in each country, so they also have a decisive role in the world's food production. These results based on estimates represent the role of these two groups in feeding and agricultural production alike. On a global scale there has been an increase within the category of middle and high profitability countries (Sarah et.al, 2016). Despite the significant transformation of global food supplying chains family farmers still significantly contribute to global agricultural production (about 2.2 trillion USD) (World Bank, 2014).

There are 10.8 million business units with an agricultural profile in the European Union that cultivate 174.4 million hectares of land. Although the European agricultural model is built on family farms of small and medium size, its farm structure is characterised by the dualism of large and small farms. The average European farm size is 16.1 hectares, the farms employing only family members are 9.3 hectares while the size of those with paid labour force is 148.7 hectares.

Regarding the issue of using labour force 78.8 percent of total agricultural labour use is attributed to farms employing exclusively family labour force. It amounts to more than 90% in Greece and Romania, which means that there is hardly any paid labour force in these farms. However, in the Czech Republic and Slovakia it is paid labour force that dominates while in the case of the German, Danish and French farms the model is mixed (EUROSTAT, 2016). In the EU-28, 10.7 million farmers manage 10.8 million farms, which means nearly 3.3 million producers. In the Southern countries this ratio even exceeds 40

percent. Shifting generations means a great challenge all over Europe as the proportion of those under 35 is only 5.8 % while that above 65 is 31.3 % (EU Briefs, 2013).

One of the future challenges for small and medium-sized family farms is access to natural resources, strengthening the ability to enforcing market interests and the necessity of cooperation and innovation (Davidova-Thomson, 2014).

In the past 15 years because of the altered economic and social environment the examination of the traditional productive role of farmers has been in the forefront of development policy and working out models that encourage enterprises and enhance proactive entrepreneurial behaviour has been proved of vital importance (Happe, 2004). Changes in the rural economy has an impact on sources available for farming, employment and possibilities other than production, which can make use of the labour force of the households. Production also increases depending on available technologies and their adaptation. That is why research and development in this area is just as important as the measures of the CAP. The areas where continuous innovations play a key role should be prioritized such as environmental protection services and sustainable rural communities (Reed et al., 2009). Since the 2008 CAP reform with the appearance of disposable sources not too strictly tied to production, agricultural farms have undergone a structural change (Richardson, 2005; Midmore, 2011). These changes brought along a more thorough post productivist multifunctional rural economy that was especially started in connection with region, society and farm households (Leck et al., 2014). However, some critics suggest that reforms hindered the adaptation/application of productivity boosting innovations and the further enhancement of farm efficiency (Rickard, 2012).

The definition of family farms is very versatile both globally and nationally. Based on complex international research on defining family farms 36 different definitions have been found. What they have in common is that they dynamize the labour force of the family and the family manages the farm (Garner & de la O Campos, 2014). Some definitions have maximised the farm size above which the enterprise cannot be regarded as a family farm. Furthermore, the ratio of non-agricultural income of the total household income has also been maximised. The relationship between income earned outside and income earned inside the farm can be complex. Demanding support or supports for activities in the farm can compete with or supplement income generating activities (Morris et al.,2017).

In Hungary individual farm is a statistical category while family farms can be well defined in agri-economic, legal and taxation aspects. As there is no effective farm regulatory law to date that would exactly define the differences between size categories, the comparison of small and large farms from the aspects of business administration, land ownership and competitiveness is rather complicated (Kurucz, 2012; Alvincz, 2013; Némethné, 2015).

Due to the facts described above, the definition of family farms in the Hungarian specialist literature is versatile similarly to the West European practice. When examining the definitions family farms are such farms that carry out income generating activities for a long term full time or part time typically based on family labour force. They are usually managed by families; the land and a great part of the assets are owned by the family but, at the same time, the farmer also leases significant land, labour force or assets with economies of scale considerations. Furthermore, this lifestyle will be passed down from generation to generation (Nagyné Demeter, 2009, Csete, 1992). In the long term these farms are the basic structures of rural development and for preserving the rural way of life. The Hungarian rural development strategy (2012-2020) assigns a key role to family farms in enhancing the population maintaining and supporting ability of our rural areas. Their significance in production structure is outstanding. In 2017 57 percent of the area registered for land use was cultivated by natural persons.

2. MATERIALS AND METHODS

2.1. Materials

The partial results of the present paper are part of complex research which started in September 2017 and was directed at determining the position of family farms that deal with agricultural production in their production structure. Moreover, it also explored new opportunities for future development in the region of the Hungarian-Slovakian border. The primary objective is exploring such information that can serve as the basis for future development concepts. The sample areas of the examination include Heves, Komárom-Esztergom and Nógrád counties as well as the Felvidék (Uplands) district that borders these three counties. At least 10 percent of the family farms registered in the counties were asked to ensure representativity. In addition to the quantitative examinations qualitative information was also collected in the form of in-depth interviews. The latter ones are directed at the detailed analysis of the statistically proven correlations of questionnaires and eventually to produce quantitative results.

This paper processes the results of the Heves county sample. During the examination 99 farmers were asked by means of a questionnaire. There are 420 registered family farms in the region so the 10% threshold for representativity was achieved. In addition to the general data the questionnaire also includes the questions on farming conditions, land use and the inclusion of external resources. The objective of the questionnaire survey was to examine opinions and reactions. While conducting this research our basic hypothesis was that the market position of family farms will improve after the inclusion of external resources.

2.2. Methods

During the examination two data collection methods were used: the primary and the secondary ones. The source of the primary data collection was based on the questionnaires of our empirical research supplemented by the precious information gained from the interviews conducted with the farmers who filled in the questionnaires. In addition to the questionnaires several interviews were made. These were rather professional talks and not standardized interviews with family farmers who filled in the questionnaires beforehand. Officials of the agricultural chamber, and the members of the village consultant network were also included in the discussion. In the examination agricultural producers make up the observed basic multitude while the unit of analysis are family farms. During sampling the method of accidental sample taking was used and the expected item number is 10 percent of the farms that make up the entire sample.

The simple descriptive analyses of the time series data of secondary databases (Central Statistical Office, Eurostat, FADN) helped identify the changes in the operational conditions of business units.

2.2.1. Methods of the analysis

The secondary analyses were carried out after the simple statistical examinations that evaluate and numerically express the basic attributes of the sample. In addition to the statistical tests that summaries the distribution of the attributes of the simple single variable, descriptive statistics generally serves to sum up the examined data. Descriptive statistics include the frequency analysis which was also used by us where the relative and cumulative distribution of variables were analysed and illustrated. In the case of multiple choice, the analysis was carried out by means of frequency and crosstabs based on the predefined groups and sets of multiple choice.

The correlation between the nominal type variables, that helped test our hypotheses, was described by an association indicator. During the analysis the data were arranged in crosstabs and the validity of the causal relationships based on frequency was checked by applying Chi-square test. The level of significance was set at a conventional value ($p<0,05$). The test decides on the nature of the correlation between the variables and says nothing about the direction or the strength of the correlation. Neither the direction of the relationships nor the direction of the observed processes could be determined due to the few items of the sample as such statistical analyses might have resulted in drawing false conclusions.

3. RESULTS

3.1. Conditions for operation

International analysts rank all the countries of East Central Europe as developed regions with high revenue based on the agricultural profitability. In these regions the average size of family farms has continuously been increasing for the last 10 years and this tendency is expected to rise, as well.

By examining our research sample areas within the EU, it can be concluded that Hungary and Slovakia are characterised by a farm structure, agriemployment and land endowments that approach the European average but worse that average profitability and low efficiency.

The number of family farms registered in Heves county approaches the Hungarian average (Figure 1) and due to the government intervention (tax allowances, simplified land purchase) their number has been increasing in the past 10 years. However, production structure still differ from the European agricultural model.

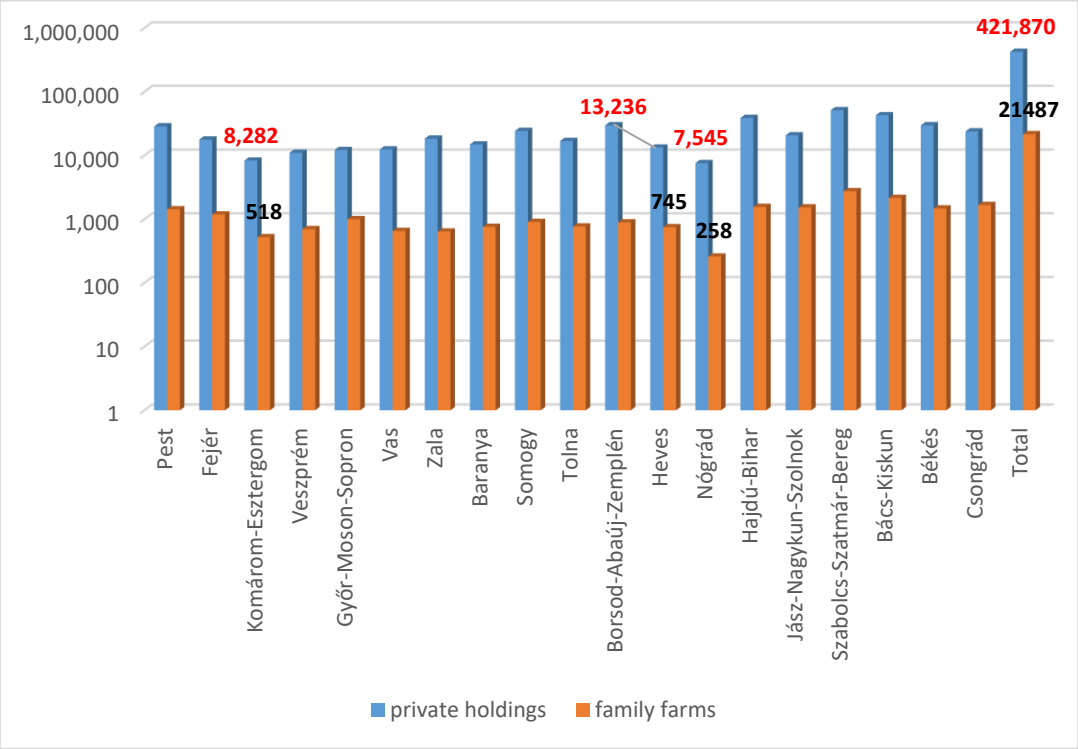


Figure 1. The number of private holdings and family farms in Hungary, 2016

Source: author's own editing based on the database of HCS and NÉBIH (National Food Safety Authority)

The great diversion of the number of farms can be explained by that fact that most farms can be found in Szabolcs-Szatmár-Bereg, Bács-Kiskun, Pest and Hajdú-Bihar counties while the tiniest ones are in Nógrád and Komárom-Esztergom counties. These proportions are reflected in the number of family farms, as well.

The number of individual farms has been decreasing continuously. Between 2000 and 2013 the number of farms were halved (in 2000 there were 916 thousand, in 2013 only 474 thousand). First, the self-catering producers gave up agricultural production. In 2000 a decisive part of individual farms was characterised by farming to cater for their own needs and a further one-third offered the excess on sale. Since then production for sale has become more widespread. In 13 years the number of farms producing for sale has quadrupled, which shows that family farms are getting stronger.

3.2. General characteristics of the sample

Based on the gender, 74.4 percent of the responding farmers (n= 99) were male and 25.3 female. This suggests that although women are represented as farmers, they rarely do this. Most typically, they act as helpers or employees in production.

Distribution by age shows unfavourable tendencies. The average age is about 52 and 11percent of the respondents were under 35 and those above 60 were represented by 24 percent (Figure 2). The youngest respondent was 21 years old and the oldest 82. These county data show a more favourable picture than the national average.

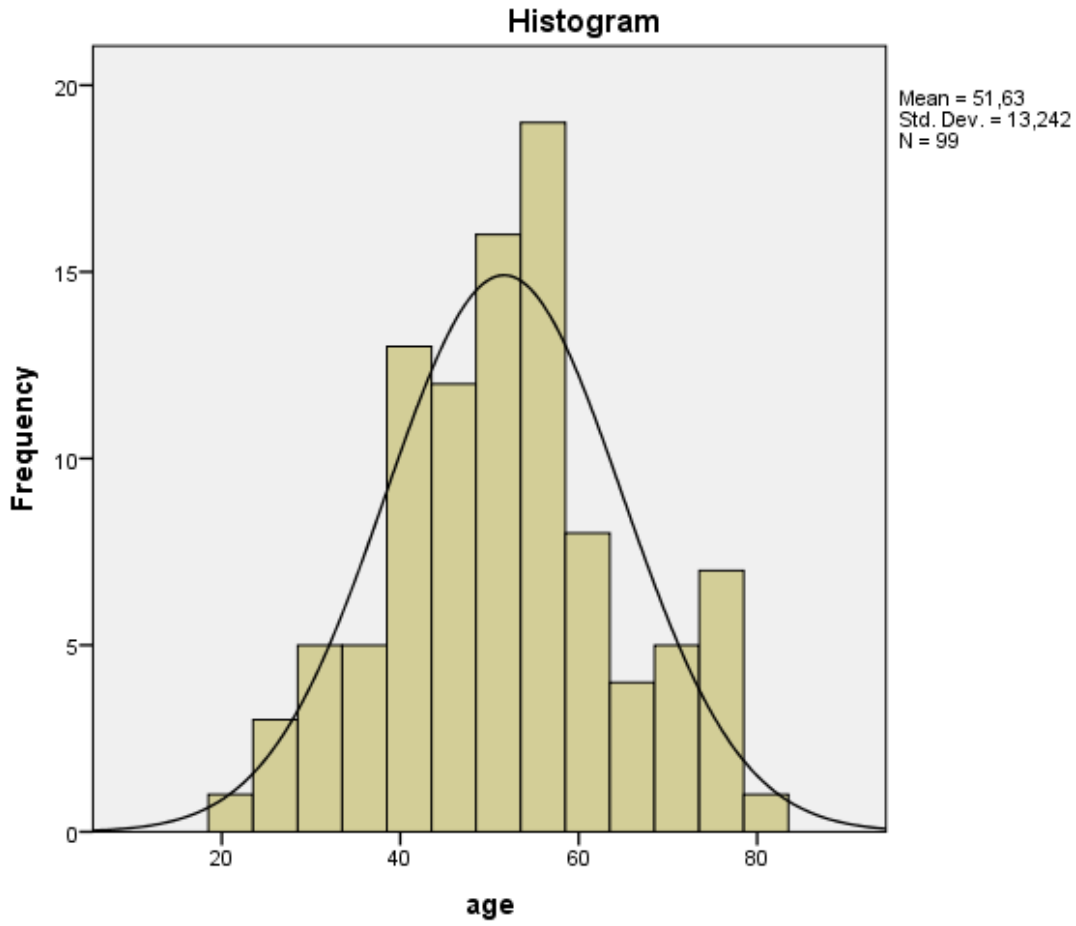
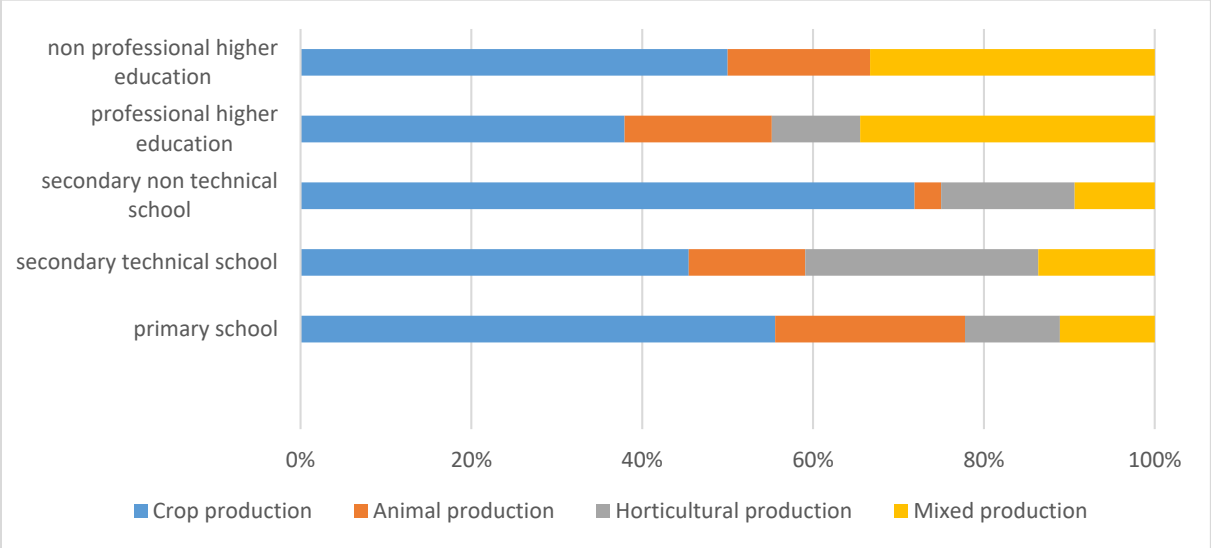


Figure 2. The distribution of respondents by age groups regarding the frequency of the valid answers

Source: author's empirical research

Regarding the *duration of farming* 59.6 *percent of the respondents* deal with farming full time or part time for *more than 10 years*. The number of respondents with five-ten years of experience reaches 23.2% while those engaged in farming for less than five years is 17.2%. This can provide a favourable basis for evaluating the questions on opinions and reactions. Regarding the nature of farming crop producers dominate (55%) followed by those in horticulture (18%) due to the high ratio of vineyards in the region. Farmers of animal production and mixed production are proportionally represented in the sample.



n=99, p≥0,05

Figure 3. The distribution of educational level and type of farming in valid answers (%)

Source: author's empirical research

The quality of human resources is of key importance, so the educational level and qualification were also examined. There was no statistical correlation between qualification and the type of farming. However, the tendencies are worth noticing.

- in the case of crop producers those with secondary non-technical education dominate
- in animal production and horticulture technical education is decisive both on secondary and higher education level
- within the group of higher education qualification technical skills dominate in all types of farming

In terms of the distribution of qualification the population of the pattern shows a more favourable picture than the national average. This can be due to the higher proportion of young respondents.

3.3. The inclusion of external resources

One of the objectives of the research is to examine the inclusion of external resources. We have analysed how activities diversify and whether they apply for loans to develop their operation (nowadays several loans aiming at farmers have appeared on the market) and they require education or training for their development and operation. With the issues and questions examined it was our objective to find out to what extent the future objectives of farming depend on the behaviour of looking for external resources.

Basically, enterprises were aiming at retaining and developing agricultural activities in the past three years (Figure 4).

Only few took on the diversification opportunities while the majority indicated ready-made and half prepared products. Considering the support opportunities of rural development programmes between 2014 and 2020 this is not a very favourable phenomenon. The positive tendency is that only 10% of the respondents did not know what to do in the forthcoming three years.

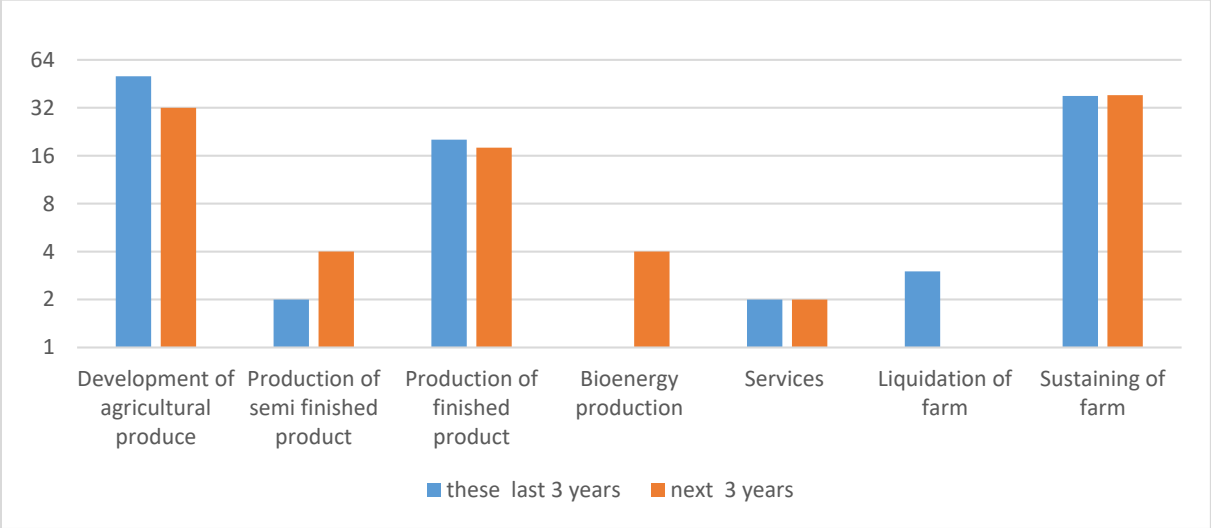


Figure 4. The objectives of farms between 2015 and 2021 in valid answers (%)

Source: author's empirical research

Even though most of the farmers indicated development and retaining in the past three years, only 14% applied for a loan. Based on the responses taking out a loan is basically simple and fast. The explanation can lie in the fact that financing from loan is considered risky. This risk aversion or low risk preference can also be seen in the distribution of diversified activities. Crosstab analyses did not show any correlation between taking out loans and age or educational level ($p \geq 0,05$). Neither did it correlate with the *duration and type of farming*. According to the findings of previous research in 2009 this group of farmers have a low level of intention to take out loans. Willingness to take out loans did not depend on the duration or type of farming, either (Nagyné Demeter, 2009).

The low innovation skills of farmers are frequently mentioned in the specialist literature, which can be due to lack of education or qualification in most cases but especially from lack of short term trainings. The examination pointed out that farmers would take the opportunity of education and training offered by authorities (Figure 5.).

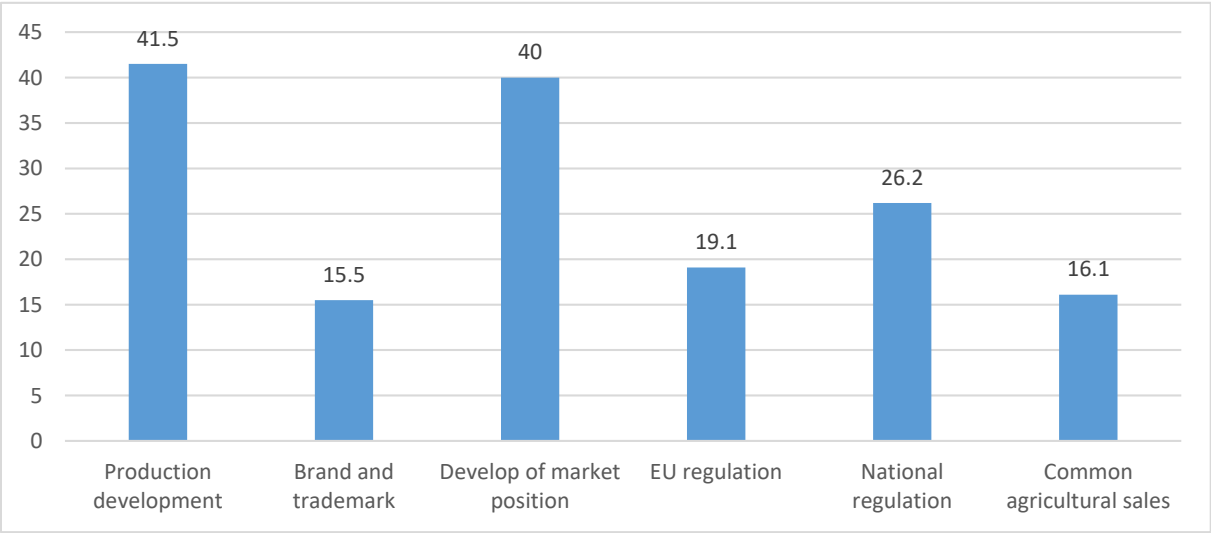
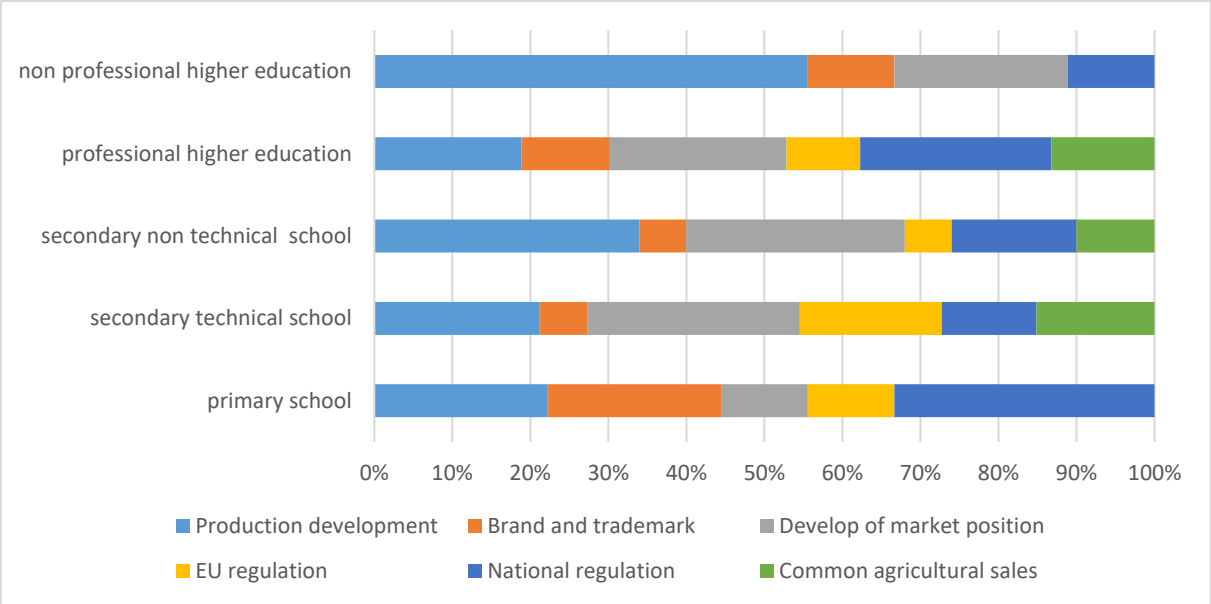


Figure 5. The distribution of educational training in valid answers (%) n=99

Source: author's empirical research

Technology based knowledge and making use of market opportunities were preferred by farmers. This is a positive tendency as both play a key role in retaining and developing farms. Unfortunately, the alternative of 'common sales opportunities with the farms in the EU' received very low level of frequency although it could be a point for breaking out for the farms in the future.

There was no statistical correlation detected between educational level and training preference, but we find the figure informative (Figure 6) as it may induce further research.



n=99, p≥0,05

Figure 6. Training opportunities depending on the level of education in valid answers (%)

Source: author's empirical research

The data of the figure reflects that those with lower educational level would require trainings in all areas. Technological information on product development is preferred by those with non-agricultural education. Farmers with higher level of education are more knowledgeable about regulatory conditions, both Hungarian and those of the EU.

4. CONCLUSIONS

The partial results of the research show that farmers do not make use of bank loans when including external resources in contrast with SMEs. However, this can determine their diversification ability although these opportunities are frequently searched. Their risk taking is of low level, which characterises both the young and the old farmers. When comparing previous research results with the present ones we can state that this problem has been around for nearly a decade. Needs for technological type knowledge also means a positive tendency in improving innovation abilities although it lags the ideal state. In the future further research is necessary that would stress the training requirements of some groups of farmers and the shortcomings of taking out loans.

The future of the farms is basically influenced by the fact how they can obtain and make use of external resources. The continuously changing market conditions and requirements, the instability of the economic environment and the lack of capital of the farms all justify the use of external resources. Entrepreneurship, diversification ability within the farm, developing resources or expanding the profile can critically influence the survival rate of family farms managed by peers.

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