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**COMPARATIVE ANALYSIS OF FARMERS' MARKETS IN THE HUNGARIAN
TRANSDANUBIAN REGION¹***OCENA PORÓWNAWCZA RYNKÓW ROLNICZYCH W WĘGERSKIM REGIONIE ZADUNAJSKIM***Key words: farmers' market, Hungarian Transdanubian region, questionnaire survey, differences, market opportunities***Słowa kluczowe: rynek producentów, Węgierski Region Zadunajski, ankieta, różnice, szanse rynkowe**JEL codes: Q13*

Abstract. A farmer's market, as a type of short supply chain, can solve many problems concerning long-distance transport. In this sales form, physical distance is reduced between the producer and the consumer. Furthermore, personal relationships and trust can also be established between these two actors. In addition, it provides small producers with the opportunity to produce and sell local, high-quality foods, and consumers are able to enjoy delicious, mostly locally-sourced, organic food products. Farmers' markets are becoming an increasingly popular sales channel in Hungary. While in 2010 there were 100, in 2014 there were around 200 farmers' markets; in 2017, their number increased to more than 250. The National Rural Development Programme also encourages the sale of local products in this form. In this paper, a questionnaire survey was conducted among producers in the largest farmers' markets of the Transdanubian Region in Hungary. The findings were used to analyze the farmers' market features of the region.

Introduction

Recently, conventional farming is being increasingly replaced by alternative farming methods (ecological, integrated, etc.). These methods have a positive impact on the environment and people's health, as well. The number of conscious customers, who consider the origin and quality of eaten produce, are increasing gradually. They are looking for purchasing opportunities where they can get information about a given product and rely on good taste and quality of the product based on several product samples [Kacz 2014]. Therefore, there is a need for methods that satisfy this demand in a local, safe and sustainable way. So-called short supply chains (RELS) may be an appropriate option due to a reduction in the physical distance between the producer and customer. What is more, in most cases, production takes place within a framework of organic farming. The farmers' market is one of the possible types of short supply chains. It follows the principle of direct sales by excluding retailers, therefore this means of selling produce is classified as a short food supply chain [Póla 2016]. The local farmers' market is a market where small-scale farmers sell agricultural or food products from their farm. These farms are generally located within a distance of 40 km of the market. Local and fresh products can be easily accessed by these attractive markets, which in recent times are popping up in more and more places. Besides the typical flavours of the countryside, farmers' markets represent a community experience and as well as a pleasant pastime. Farmers' markets give consumers the opportunity to buy domestic food produced by small-scale farmers. This not only strengthens customer health awareness, but also the fact that by purchasing the farmers' products, they are supporting their livelihoods, thus promoting the spread of consumption of domestic, small-farmers' goods. By creating a relationship of trust between the producer and the consumer,

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farmers have the opportunity to focus on quality of their products with even better products, while the consumer can get food that is of well-known origin and production.

A producer's market provides sales opportunities for local producer farmers occasionally, periodically or regularly and may be organized by a local group of farmers, the local government, an integrator or other organization [Kajner 2007]. This type of sales constitutes a new legal option, which can be organized periodically under lightened conditions, without an intermediary [Hinrichs 2000]. These markets can be specialized in organic products, but organic farmers also can join already existing markets integrating traditional products.

One of the most important rules of local farmers' markets is that only local small-scale farmers or licensed traditional small-scale producers may sell on the market.

A small-scale farmer is a person who sells small quantities of food produced by himself/herself or is processed from a raw product. It is important that the small-scale farmer may supply retailers and catering organizations located up to 40 km from the farm. Small-scale farmers' raw products include vegetables, fruit, milk, live animals, eggs, honey and mushrooms; processed products include fruit juices, cheese, butter, cottage cheese, sausages and jam.

Licensed, traditional, small-scale producers are not private entrepreneurs; they produce on their own farms and can confirm this with a licence.

Small-scale farmers and traditional, licensed, small-scale producers have to comply with a number of rules of sale in farmers' markets. For instance, they have to guarantee fruit and vegetables which are healthy, clean, pest-free, strange taste-free and odour-free. In addition, products must be in good condition and appropriately prepared for transport, so that they can arrive at the set market in appropriate condition. It must be emphasised that the producer is responsible for quality, food safety, documentation and traceability of the product [Komárom-Esztergom County Government 2017].

All in all, these short-term supply-chain farmers' markets have become important elements of economic and rural development over the years.

Research material and methodology

Farmers' markets were examined from the supply side. Data were collected from six major farmers' markets in the Transdanubian region of Hungary in 2017. Research focused on the characteristics of the farmers selling. The main products of the viable farmers and with specific features e.g. product group, arable land, number of employees) were explored and determined. The survey was carried out by questionnaires completed at interviews. A total of 68 questionnaires were filled in this way.

The evaluation of the given responses was performed using basic statistical methods (mean, standard deviation, ratio, analysis of variance, correlation). Using analysis of variance (ANOVA), it was examined whether there is a significant difference between the observed six farmers' markets in any aspect, that is, whether different locations affect the specificities of the farmers on the set markets. After that, farming and marketing characteristics of farmers were examined in detail based on responses given by producers in each market.

Research results

As for the analysis of variance (ANOVA), the number of scores in each treatment (r) is the number of farmers surveyed per market, while the number of treatment conditions (k) is equal to the number of observed farmers' markets. Thus, the total number of scores is the multiplication of the two ($n = r \times k$). With these data, analysis was carried out for a total of 14 factors that show some of the farming and sales characteristics of the farmers'.

In calculations, F-ratios were calculated in case of all 14 factors. Since the two degrees of freedom were always the same, each test was associated with the same critical value (F-critical) (tab. 1).

The result of the variance analysis shows that the value of the F-ratio was higher than the critical value in case of four factors. These factors are the degree of the farmers, the number of employees, the type of products sold and the marketing tools used. Therefore, in light of these four factors, differences can be observed depending on the farmers' location. Accordingly, there are differences in two main regions: in territories located closer to the capital and to the central part of the country and in the counties located along the western part of the country. In case of the former farmers, they are better educated (60%), have a higher number of employees (2-3 per farm), produce more processed products, and use more marketing tools (4-5) to promote their products than farmers from the other region. In contrast, farmers in counties of the western part of the country have lower qualifications (20-40%) and fewer or zero employees (0-1 people), the number of their unprocessed products are much higher and they use fewer (2-3) marketing tools.

For other characteristics, farmers can be characterized with almost the same or similar characteristics, irrespective of their geographical location or market position.

When it comes to farmers, the number of older workers is high, just like in the case of traditional agricultural producers. More than 65% of respondents were over the age of 45. Obviously, they have been operating their farms longer than their younger counterparts. The average operating time of 13 years suggests that this age group started business relatively late in life, over the age of 40; just as younger people in this field of work. 66% of respondents work with products of plant origin, 30% of them work with products of animal origin, while 2% of them work with mixed products. However, there is a significant difference between the two regions mentioned above, as most of the products of animal origin are produced in the central areas of the country. Within products of animal origin (e.g. milk, dairy products, live pigs, pork, dry goods, eggs, honey), products of different animal species appear in almost the same proportion - nearly 60% of animal species products have been processed. 90% of products of plant origin come from the horticultural sector (vegetables and fruit in the same proportion). They can be also characterized by the fact that half of the farmers produce vegetables and fruit. As far as fruit is concerned, 1/3 of farmers only sell fresh fruit, 1/3 of them only sell certain fruit products (jam, syrup and juices) and 1/3 of them sell a mixed palette (fresh and preparations). For vegetables, fresh and unprocessed goods are the most popular (70%), a small proportion (20%) of producers only sell vegetable products, while mixed sales are representative of 10% of farmers. Mixed sales constitute 50% of fresh products and 50% processed.

There is no correlation between available arable land and the main product produced by farmers ($r = -0.13$). 91% of farmers have some land in their use (leased or owned). There's a significant standard deviation in the size of arable land between the representatives of different product groups. Honey producers do not have any land and the same goes for almost 50% of producers of products of animal origin. For livestock farming, taking into account the size of the stock, an average of 17 ha was the area size cultivated by the surveyed farmers. However, the standard deviation is extremely large, ranging from 0.5 to 150 ha. In the case of vegetable production, the average cultivated area was 4.7 ha, predominantly between 1-5 ha of farming land, but farmers with an area of under 0.5 ha are also represented. Out of more than half of

Table 1. Values of the functions of the variance calculated for the examined variables

Variables	F _{ratios}
Gender	0.1091
Age (years)	1.4900
Qualification	2.7813
Number of employees	4.8867
Time spent in production (years)	1.8769
Size of cultivated area (acres)	1.3380
Product groups	1.8823
Production mode	1.2358
Type of products	4.6699
Number of sales channels	1.3730
Number of marketing tools	3.6051
Time spent in the farmers' market (years)	1.7376
Number of customers (capita)	0.7109
Delivery distance	1.9373

Source: own calculation

the fruit-producing farmers farming between 1 and 5 ha of cultivated area, approximately 25% are under 1 hectare. Depending on the main product sold and the intensity of production, there may be significant differences in the demand for land area. Because of the heterogeneous land demand, no "optimal farm size" for all farms can be determined quantifiably.

As for employees, apart from the main product, examined farmers usually do not employ an external labour force, instead mostly family members are involved. There is no close relationship between the number of employees and the size of arable land ($r = 0.47$), so it is difficult to establish whether they would employ employees on larger land. The average number of employees is around 2, however, there are significant deviations regionally (see standard deviation calculation). While almost every producer in the middle regions employs from 1 to 8 people, only one quarter of farmers in the western region employ 1-5 people. There is no correlation between the number of employees and the main product ($r = -0.3$).

Almost three-quarters of respondents (72%) use conventional, traditional production methods, and only 10% of them use organic farming. This special method is only characteristic of fruit farmers and fruit and vegetable farmers. In the case of vegetable growers, intensive and semi-intensive farming methods are typical. In order to improve profitability, it would be desirable to increase the proportion of organic products, as is observed in community agriculture. Among others, an increase in the share of such products would also result in a positive shift in producer prices.

In addition to farmers' market, farmers sell their products on average using 2-3 other distribution channels, but the number and type of these channels differ from each other. While in the central region of the country, it is typical for 1-3 distribution channels to be used, in the western region it is 2-6. This is due to the fact that the middle areas are located closer to the capital, where several markets are available, while farmers living further away have to use multiple distribution channels to sell their products. It is equally true for each region that the most favored distribution channels, in addition to farmers' markets, are traditional markets (59%), as well as sales from home (60%). The latter is mainly opted for by producers of animal products (including beekeepers as well), but less by fruit growers, while vegetable growers fail to choose this type of sales. Nearly a quarter of farmers sell to buyers, restaurants as well as by means of home delivery. The latter two appear in a larger proportion in western regions (48% and 38%). In this area, however, it is not important to sell to bio stores, greengrocers, consumer communities or online, while in the middle region these channels are also present among one-quarter of farmers. It can be said that all the surveyed farmers, in all regions, hardly sell at fairs, along the way, or by PSOs (Producer Sales Organizations).

As for buyers, each farmer has regular buyers and, occasionally, about 15 to 40 buyers visit them on farmers' markets. Almost one third of farmers have to look for additional markets, beyond 40 kilometers away from local sales, and only about 15 percent of them have the opportunity to sell locally (within 5 kilometers). Most of them operate in regions close to the capital. There is also a relatively large standard deviation between delivery distances of farmers producing different product types, particularly between vegetable growers and mixed production (vegetable and fruit growers) farms. However, it is basically a fact that producers of animal products sell within relatively small distances (within a radius of 25 km), obviously because of the viability and perishability of the products. Beekeepers and fruit growers deliver their products rather long distances (50-100 km).

As for marketing tools, the word-of-mouth (WOM) is the most commonly used and popular advertising that is applied by at least three quarters of all producers as producers trust this the most. A customer's positive feedback about a product, giving the feedback to friends, is the best form of advertising for farms. Based on the results of variance analysis, it can be stated that the marketing tools used by the producers vary considerably between regions.

Even though more than half (53%) of all producers use online advertising, this marketing tool is mainly popular in the middle region of the country, where 70% of producers use it on a daily basis for marketing. The advertising board is also popular in this region, while in the western part of the country, the leaflet is preferred. Concerning other marketing tools, standard deviation is extremely high for both producers and county markets as well. Print media, the use of vehicle advertising, product promotion at exhibitions, fairs and the delivery of product samples to the consumer are also displayed.

Summary and conclusions

During this research, farmers' markets from different regions of Hungary were examined in order to find out what normal and special characteristics have Hungarian farmers who choose this relatively new distribution channel and whether there are territorial differences within the country.

Each of the interviewed farmers drew attention to the importance of farmers' markets. Their confidence in the new system is reflected both in their credibility and commitment, which can best be demonstrated in their long-term plans. However, the most prominent similarity on all three markets is the focus on humanity, namely that there is a primary focus on meeting individual needs.

As for regional differences, two major regions can be distinguished where specific characteristics of producers (qualifications, number of employees, types of products, marketing tools) differ from each other significantly. One such area is the western region of the country and the other one is the central part of the country. The latter is closer to the capital. Obviously, the characteristics of this region is fundamentally influenced by this proximity.

More than half of farmers surveyed represent the middle or older age group, so the role of the generational change may become more important in the future. The aim is to promote the growth of young farmers in this form of farming.

Respective of the product ranges, it can be stated that a smaller proportion of farmers deal with animal products and only in the middle regions, so it would be desirable to promote the production of these products nationwide.

There are economic reasons behind the involvement of few or none external labour. Due to size and revenue, these farms can provide an income of up to one family per annum, while the extra wage of employing a labour force is financially difficult in most cases.

Farmers in the western region try to sell their products through a number of sales channels, while in the middle region, far less marketing channels are applied due to the market potential of the capital, so their delivery distance is much lower. Besides the farmers' market, the most popular sales channels are the traditional market and home sales. Other sales channels are not known or are used minimally. However, these could provide new opportunities for farmers. The intermediary role of PSOs is not used, which could, however, significantly facilitate the sale of their produce. In the long term, it would be useful to promote other sales channels among producers by different professional organizations.

A very important idea would be to introduce and promote farmers' markets among all age groups with the involvement of the media. With widespread health awareness, it is possible to reach different ages with the assistance of internet journalists, lifestyle magazines, and TV interviews. In our opinion, the attention of the younger generation could be attracted by posts of well-known people in social media. Additionally, the popularity of visiting farmers' markets could be promoted by using a combination of special events and festivals as they would attract a mass of consumers to the market and are often frequented by residents of distant settlements not only locals. In addition to these events, family days could also be a good way of introducing farmers' markets. It is considered expedient to increase the opening hours of farmers' markets.

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Streszczenie

Targ rolny, jako rodzaj krótkiego łańcucha dostaw, może rozwiązywać wiele problemów związanych z transportem na duże odległości. W tej formie sprzedaży zmniejsza się odległość fizyczna pomiędzy producentem a konsumentem, co więcej, możliwe jest również nawiązanie osobistej relacji i zbudowanie zaufania pomiędzy tymi uczestnikami rynku. Dodatkowo targ rolny daje niewielkim producentom możliwość produkcji i sprzedaży lokalnej żywności wysokiej jakości, a konsumenci mogą cieszyć się smacznymi, głównie lokalnymi, ekologicznymi produktami żywnościowymi. Targ rolny stanowi coraz popularniejszy kanał sprzedaży na Węgrzech. W 2010 roku na Węgrzech było 100 takich targów, a w 2014 roku 200, a w 2017 roku ich liczba przekroczyła 250. Krajowy Program Rozwoju Obszarów Wiejskich również zachęca do prowadzenia tej formy sprzedaży lokalnych produktów. Wykonano badanie sondażowe wśród producentów sprzedających swoje produkty na największych targach rolnych w regionie Transdunajskim na Węgrzech i dokonano analizy targów rolnych w tym regionie.

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