

Internet use as a form of direct sales for agro-food products- Empirical evidence before and during the COVID-19 pandemic

Korištenje Interneta kao kanala izravne prodaje za poljoprivredno – prehrambene proizvode – Empirijski nalazi prije i tijekom COVID-19 pandemije

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ABSTRACT

Selling agro-food products via the Internet is becoming an increasingly frequent means of sale. The importance of the Internet as a sales channel has been particularly pronounced during the COVID-19 pandemic, which has been characterised by the use of digital technologies in all spheres of human life. The paper presents an analysis of the Web farmer's market application (WFMA) over a 5-year period. WFMA is used by local producers in Istria County (Croatia) and online customers. The analysis was carried out in several steps using primary and secondary data sources. Primary data were collected by two online surveys on a farmers sample (N=89) and WFMA users (farmers) (N=53) and later analysed running χ^2 test and T-test. Secondary data was collected mainly from the WFMA administration and from other available reliable sources.

Keywords: Istria County, Croatia, local agro-food products, direct sale, Internet, COVID-19 pandemic

SAŽETAK

Prodaja poljoprivredno – prehrambenih proizvoda putem Interneta postaje sve učestaliji oblik prodaje. Važnost Interneta kao kanala prodaje posebno je izražena tijekom pandemije COVID-19, koju je karakterizirala uporaba digitalnih tehnologija u svim sferama ljudskog života. U radu je prikazana analiza web aplikacije „Domaća web tržnica“ (DWT) kroz petogodišnje razdoblje. DWT je korištena od strane lokalnih proizvođača u Istarskoj županiji (Hrvatska) i online kupaca. Analize su provedene u nekoliko koraka koristeći pritom primarne i sekundarne izvore podataka. Primarni podaci su prikupljeni putem dva online anketna istraživanja na uzorku poljoprivrednika (N=89) i DWT korisnika (poljoprivrednika) (N=53) i analizirani χ^2 testom i T-testom. Sekundarni podaci većinom su prikupljeni iz administracije DWT i ostalih dostupnih izvora.

Ključne riječi: Istarska županija, Hrvatska, lokalni poljoprivredni – proizvodi, izravna prodaja, Internet, COVID-19 pandemija

INTRODUCTION

Direct sale of local agro-food products is the most efficient way to sell products from small and medium farms. The benefits of this type of short supply chain are felt by producers and customers alike. Customers have access to fresh products directly from the place of production, while producers can present products more efficiently and highlight the better selling prices due to direct sales (Baker et al., 1992; D'Amico et al., 2014). Online sales are one of the most innovative ways of selling agro-food products. The growing need to use the Internet to reach customers in the last two decades is evident (Teo and Pian, 2003). Besides, the use of Internet technology by SMEs is gaining more ground (Stevenson and Hamill, 2002), but the agro-food sector is somewhat lagging behind this adaptation to modern business trends (Santos and Blanco, 2011). The main limiting factors for the use of Internet sales for agro-food products are the specific features of a product that typically requires particular storage conditions, the uncertainty of customers for this form of agro-food sales, and the risks associated with the legal framework of online business, as well as the uncertainty of transactions (Santos and Blanco, 2011).

Researchers have been studying Internet usage for over 15 years when analysing the complexity of farmers adapting to Internet technology (Warren, 2004; Batte, 2005). In the context of agriculture, the Internet can be used as a business tool for farm management (Pickernell et al., 2004) or as a type of media that provides a convenient method to advertise a farm business, sell products and communicate with consumers (Kanaththa Kankanamge, 2012). As a form of direct sales method, the Internet can be used by producers at one's own website or using the services of different platforms intended for advertising and the sale of agricultural products. Moreover, consumers are purchasing more and growers are selling more products using their proper websites and other online applications, allowing access to a more extensive customer base (Thilmany et al., 2006). Farmers need to adapt to trends and start using Internet technology more intensively in the promotion and sale of products to

increase competitiveness, achieve better visibility, reach a larger number of customers and ensure adequate prices for their products. The Internet, as a form of direct sale of products, has proven to be a key and, in some cases, the major way of selling agricultural products during frequent lockdowns that have shifted as a result of the COVID-19 pandemic.

The paper has two main aims:

1. Explain the development of a Web farmer's market application (WFMA) within the EU project as a helpful tool for local producers.
2. Analyse direct sales and promotion of agro-food products through primary and secondary data collection via the Web farmer's market application (WFMA).

THEORETICAL BACKGROUND

Alternative food networks for agro-food products with an emphasis on Internet-based sales

Alternative food networks (AFNs) are typified as short supply chains (Renting et al., 2003; Corsi et al., 2018) with opportunities for consumers to connect with producers, allowing them to purchase fresher, safer and tastier foods whose origin is known and trusted (Paül and McKenzie, 2013). Tudisca et al. (2014) divide AFNs as follows into direct sales, farm shops, farmers' markets, vending machines, e-commerce, solidarity purchasing groups, and pick-your-own method.

Direct sales of products generate higher income for farmers through better selling prices, on the other hand increasing the demand of customers to buy fresh and local food (Govindasamy et al., 1999). Starr et al. (2003) pointed out that direct sales will more likely involve small size farms, farms that grow more types of products and farms using more friendly production practices. Lev and Gwin (2010) analysed the topic of farm-direct marketing and calculated, using the USDA data, that farm-direct sales represented about 25% of sales for the year 2007. The author concludes that farmers that market directly come in all sizes but that most of them are small farms (59%).

The use of digital technologies by producers is influenced by a number of factors, including the characteristics of the economy with its objectives, management and marketing of the homestead, community culture, psychographic elements in relation to decision-makers such as trust and demographic features such as the level of education (Mishra and Park, 2005; Alvarez and Nuthall, 2006; Csótó, 2010; Low and Vogel, 2011). The type of production may also affect the use of direct sales, and this form of sale is more favourable to fruit and vegetable producers than livestock producers (Low and Vogel, 2011). Leroux et al. (2001) pointed out that the Internet and e-commerce will fundamentally change the way of transaction in agriculture and that further learning and practice by producers for the acquisition of new knowledge will be required.

Researching the importance of AFNs and Internet sales of agro-food products, the way of direct sales can be a good choice for small farms with different products to gain rapid visibility to a large number of potential customers on the Internet, but it is necessary to increase farmers' knowledge about Internet sales possibilities.

Consumer online shopping behaviour

Online stores have many advantages for customers compared to physical stores. This advantage is achieved through shopping accessibility at anytime and anywhere. McPartlin and Dugal (2012) indicated that the most important thing for online shoppers is 24/7 access to shopping, as a more substantial factor than reasonable price, free and fast delivery and a wide range of products to choose from.

There is a lot of research focusing on the online shopping behaviour of consumers. Researchers have combined different variables in order to perceive their effect on online shopping behaviour: intangibility and sensory information on the online purchase (Degeratu et al., 2000; Laroche et al., 2005; Campo and Breugelmans, 2015), trust and perceived risk (Khalifa and Limayem, 2003; Kim et al., 2008; Urban et al., 2009), price sensitivities (Chu et al., 2008), transaction costs

(Chintagunta et al., 2012), customer-perceived value in the context of Internet shopping (Gupta et al., 2010; Lim et al., 2016), impact of online reviews on the decision to search and experience products (Jiménez and Mendoza, 2013), and individuals' socioeconomic characteristics (Hernández et al., 2011).

According to the above-mentioned variables which influence the behaviour of online customers, we can classify them into two categories: 1) external variables – related to the attributes of the web application used, and 2) internal variables – they refer to the psychological conditions of the consumer and his socio-demographic and economic characteristics. Additionally, several researchers have focused on online shopping behaviour for agricultural products. An et al. (2016) analysed the factors influencing online shopping intention for fresh agricultural products. The results show that effort expectancy, facilitating conditions, performance expectancy, hedonistic motivation and personal innovativeness are related to online shopping intention, and gender can moderate the effect of constructs on online shopping intention. Zhao et al. (2017) conducted a survey with online consumers in China. The findings show that reference effects have a significant impact on online purchase intention for agricultural products. Perceived value and perceived risk play a mediating role in the relations between reference effects and online purchase intention, but the mediating effect of the perceived value is found to be significantly greater than that of the perceived risk.

Chunxia and Ruihan (2016) analysed the factors which influence consumer attitudes and intentions towards fresh agricultural products for online shopping in China. The results show that perceived ease of use, perceived usefulness and trust have a significant positive effect on attitudes to fresh agricultural products shopping online. Also, perceived risk has a negative effect on attitudes to fresh agricultural products online shopping, but the influence is not significant. Hasanov and Khalid (2015) analysed consumers' online purchase intentions regarding organic food. The results indicate that website quality

has an indirect impact on online purchase intentions for healthy food in Malaysia through full mediation of customer satisfaction. Moreover, demographic factors had no significant effect on online purchase intention. Huang et al. (2014) declared that consumers' satisfaction degree of online shopping for agricultural products directly affects the development of e-commerce of agricultural products. Their analysis has shown that product quality, service of website and logistics distribution are the main factors influencing consumers' online shopping intention and satisfaction.

Online sales of agricultural products are challenging. Some products are fresh, and they need certain storage conditions and prompt delivery to the customers. On the other hand, different variables affect customers' online shopping for agricultural products. In planning the online sale of agricultural products many aspects have to be considered and for this reason the online sale of agricultural products can be a challenging task.

Impact of COVID-19 pandemic on agro-food markets

The current situation of Coronavirus, SARS-CoV-2 and the COVID-19 diseases has caused many changes across all sectors of the economy, including the agro-food market. The World Health Organisation declared on 11th March 2020 (WHO, 2020) the pandemic situation caused by Coronavirus, a couple of days after the Croatian government introduced many measures to prevent the spread of the virus, especially social distancing and movement restrictions affecting peoples' everyday lives. During the pandemic, we witnessed food insecurity due to the closing of borders, where countries with low agro-food self-sufficiency were particularly at risk. There has also been a change in the behaviour of consumers who started buying groceries *en masse* and in great quantities (Beard-Knowland, 2020), such as flour, beans, sugar and pasta for fear of food supplies becoming severed (Bakalis et al., 2020). As a result, the number of social contacts is decreasing, with the aim of reducing the risk of possible contagion, increasingly keeping consumers out of physical stores and resorting to online purchases (Deloitte, 2020). However, consumers were not the only ones affected by

the pandemic, as it likewise reflected on the producers. Since the Coronavirus pandemic appeared, the entire system of agro-food products has transferred to a digital form of business. Most commonly used direct sale channels from farmers such as farmers' markets and farm stands has stopped because of social distancing (Richards and Rickard, 2020). Although that means the end of face-to-face markets (Richards and Rickard, 2020), at the same time it creates an opportunity to expand online sales and delivery of agro-food products.

Web farmer's market application (WFMA)

The Web farmer's market application (WFMA)¹ was the main output of the project named "Organisation of the system of direct sale of agricultural products using Internet technology" with an acronym "OSIPPPIT" financed by IPA/EFRR Operational Programme Slovenia-Croatia 2007-2013. The project was realised in the period between 15th January 2014 and 17th June 2015. The WFMA has been open for farmers' and customers' registration from 23rd February 2015. Every producer registered in the WFMA has a unique profile where he/she can upload pictures, videos and textual descriptions related to their farm and products they are selling. To complete the registration, the producer needs to upload pictures of the farm and products with descriptions and prices. Each farmer in the WFMA arranges the delivery of ordered products themselves, which may likely present a constraint since most farmers have not adequately addressed the way products are delivered through the WFMA; for most of them the only way to relegate a product is to have the consumer come to acquire it at their doorstep. The usage of the WFMA is free of charge for farmers and consumers. This application provides a unique way of using the Internet as, at the same time, a promotion media and distribution channel are provided.

MATERIALS AND METHODS

The paper presents an overview of the different studies carried out during the years of implementing and using WFMA.

¹ The WFMA is available at: www.trznica-trg.eu

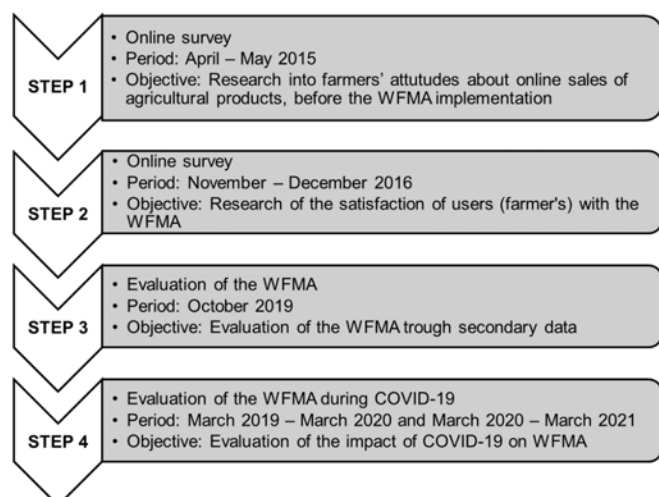


Figure 1. Steps in the research process

Source: Authors

Online survey – farmers' attitudes about online sales of agricultural products

The research was carried out before the time of designing the WFMA with the different agricultural producers to test their opinions to online sales and willingness to participate in the application. The online questionnaire was sent to agricultural producers by e-mail on 15th April 2015 and was open until 20th May 2015. The online questionnaire was sent in total to 745 e-mail addresses of Istrian agricultural producers. On 29th April 2015, a reminder was sent to fill out questionnaires to all previous e-mail addresses. The final version of the sent questionnaire had 28 open and closed questions and, in the analysis of the paper, 14 questions were used. The final number of completed surveys was 89, and the response rate was 11.95%. The response rate was in line with other online surveys (Jiménez and Mendoza, 2013; Tiago and Verissimo, 2014).

Online survey – the satisfaction of users (farmers) with the WFMA

The research was carried out one year after the WFMA was implemented. The questionnaire was addressed to the e-mail address of the users (farmers) registered in the WFMA. The questionnaire was sent on 8th November 2016 and was open until 30th December 2016. Information, views, and opinions of producers

on direct sales and satisfaction with the WFMA were collected using an online questionnaire. The final version of the questionnaire had 23 questions, but for the purpose of this study, 10 open and closed questions were used. The survey was sent to a total of 147 e-mail addresses and 53 agricultural producers filled in the survey (36% response rate). Data from both surveys was analysed using descriptive and bivariate statistics (T-test and Chi-square test). The data was analysed using software package SPSS ver. 21.

Evaluation of the WFMA results

The process of evaluation of the WFMA was conducted by experts involved in the project during November 2019. For this step, the secondary data analysis was performed. The experts had access to the administration page of the WFMA, and they could objectively identify the number of registered farmers, the number of products offered, the number of visits and the number of orders. The obtained results were quantified and presented in the Results section.

Evaluation of the impact of COVID-19 on the WFMA

The evaluation of WFMA's operations was done through secondary data available in the WFMA administration. The evaluation process took the form of a comparison of one year before the WTO declared the pandemic, 11th March 2020, and a year thereafter. The results were quantified and presented in the form of graphs comparing the number of actual online orders on monthly basis in the observed periods.

RESULTS AND DISCUSSION

Online survey - Farmers' attitudes about online sales of agro - food products

Total of 89 farmers responded to the online questionnaire. The obtained results in the sample showed there were significantly more men (76%) than women (24%). According to the level of education, the majority of respondents have secondary school (71%), followed by respondents with a university degree and higher education (27%) and the lowest share of respondents whose level

of education refers to elementary school (2%). From the sample, it is clear that farmers are combining different types of agricultural production. The results showed a wider range of different agricultural products: olives and olive oil (71.9%), grapes and wine (37.1%), vegetables (22.5%), fruit (19.1%) and processed agricultural products (16.9%). According to monthly income, most households belong to the monthly income group from 4,001 to 10,000 HRK² (50%), followed by the income of 10,001 to 15,000 HRK (24%), groups with monthly income exceeding 15,000 HRK (18%) and the smallest share of respondents receiving up to 4,000 HRK per month (8%). The average age of producers was 46. Farmers' limited knowledge of Internet usage is the constrictive element for Internet sale of agricultural products. Other items regarding different variables for limitation of use, such as payment security, customer disinterest in internet purchase, difficulty achieving a personal relationship with customers and insufficient Internet knowledge of customers are also identified as a limitation from the farmer's point of view. Significant differences are found through T-test analysis between producers with web pages and producers without web pages for Internet sales of agricultural products. Farmers with farm web pages tend to agree more with the statement on customer disinterest in Internet purchase (T-test value = 0.245; $p = 0.011$). Other variables regarding Internet use are non-significant. Farmers use different sales channels for their products. Predominantly, they make sales at the farm (80.9%), through wholesale (24.7%), via Internet (21.3%) and at the farmers' markets (18%). For Internet sales, farmers use mostly web portals (73.7%) and their personal web pages (42.1%). Farmers have different satisfaction rates with Internet sales. Most of them are not satisfied (31.6%) or have no opinion (42.1%), and only 21.3% of them are satisfied. Farmers show high interest (76.4%) in joining the WFMA. A significant difference is found between producers who use the Internet as a direct sales channel and farmers who do not use the Internet for the direct sale of products and their attitude to joining the WFMA. Farmers who use the Internet are more likely to

² 1 EUR (Euro) is 7.65 HRK (Croatian kuna), Exchange rate list of Croatian National Bank at 6th April 2015

join the WFMA (Pearson's Chi-square coefficient = 3.303; $p = 0.034$). This finding can be interpreted as meaning that producers with previous experience of using the Internet as a direct sales channel have greater intentions to be included in the WFMA.

Online survey – Satisfaction of users (farmers) with WFMA

In total, 53 farmers responded to the online survey. The proportion of female responders (50.9%) was slightly higher than that of males (49.1%). The average age of the respondents was 44 years, with a high school education level (49%). In the sample, the respondents were mostly smaller farm owners producing grapes and wine (25%), fruit (45%), vegetables (42%), processed agricultural products (34%) and olives and olive oil (25%). Similar results were found in the first sample, where there was evident diversification of agricultural production on farms. Most of the producers in this sample did not sell wholesale (64%). Farmers (users) are different satisfied with the WFMA. Farmers were most satisfied with the attractiveness of WFMA ($M=4.02$), and they are willing to recommend the WFMA ($M=4.02$). The farmers thought that the usage of WFMA is simple ($M=3.98$). Slightly worse results were obtained in terms of achieved contact with customers ($M=3.06$) and the number of web visits to individual producers' profiles in WFMA ($M=3.04$). The major share of farmers (61.1%) who use WFMA were of the opinion that the application is useful for their business, 24.1% of them had a neutral opinion, for 11.1% the application is very useful and, for 3.7% of farmers, WFMA did not help. A significant difference was found between items promotion as an important prerequisite for successful farm business and satisfaction with the WFMA. Farmers who declare that promotion is an important prerogative for farm business are more satisfied with WFMA (Pearson's Chi-square coefficient = 106.00; $p = 0.000$). Another significant difference is found between the statements that promotion is an important prerequisite for successful farm business and the age of respondents. Young farmers (under the age of 40) agree more that promotion is vital for farm business (Pearson's

Chi-square coefficient = 9.807; $p = 0.007$). Prokopy et al. (2008) confirmed that younger farmers are more inclined to use new technologies and advertising.

Evaluation of WFMA results

The evaluation of WFMA was made in the period from 1st March until 10th October 2019. In this period a total of 180 farmers were registered in the application offering 922 different agricultural products (Table 1).

Table 1. Agricultural offer in WFMA

Product group	Number of products	Share (%)
Olive oil	216	23.5
Wine and other grape products	206	22.4
Other (seedlings, forage...)	177	19.1
Honey and other bee products	78	8.5
Preserved products (jams, juices...)	50	5.4
Milk and cheese	50	5.4
Natural cosmetics	49	5.3
Fresh vegetables	47	5.1
Fresh fruit	24	2.6
Meat (fresh and preserved)	23	2.5
Eggs	2	0.2
Total	922	100%

Source: WFMA, secondary data analysis, November 2019

From table 1 it is clear that the type of products offered in WFMA mostly belong to the groups of olive growing and olive oil production and vineyard and wine production which are the main agricultural activities in Istria County. This can represent a kind of limitation because olive oil and wine are products that customers can use over a longer period in comparison to fresh vegetables and fruits which are consumed on a daily basis. However, at the same time, this is also an advantage in product storage. Following the implementation of WFMA, the project partners worked intensively in the field with the aim of including farmers in the application. After having included more than 60 farmers, an intensive

two-month promotional campaign was launched with the aim of informing the public about WFMA and encouraging online visits, as well as purchases via WFMA. The promotional campaign lasted from 1st March 2015 until 10th April 2015. The promotional campaign took place through printed and digital media. The first online order was placed on 15th April 2015. The course of online orders in the first year of WFMA's operation is shown in Figure 2.

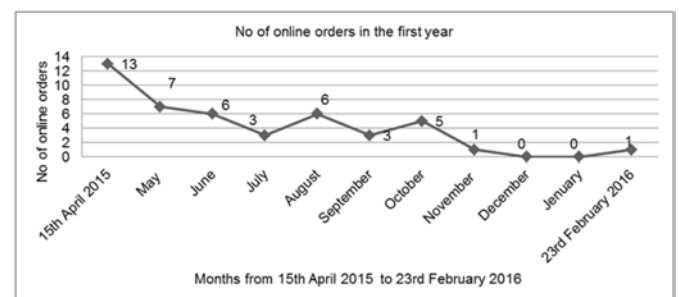


Figure 2. Number of online orders in the first year of WFMA

Source: WFMA, secondary data analysis, the period from 15th April 2015 until 23rd February 2016 (period of 1 year of implementing WFMA)

In its first year of operation, a total of 45 online orders were placed. According to Figure 2, the most intense period in terms of orders is the period dictated by the promotion activities of WFMA to potential buyers. In the period from April up to May, almost half of the total orders of the first year were made. Therefore, the promotion campaign indeed had an impact on online customers. The positive impact of promotion on the increase of online purchase intention is already established (Raghubir, 2004). After this period, the number of orders was in decline and not a single order was placed during December 2015 and January 2016.

In view of the specific kind of agro-food product ordered during the first year of WFMA's operation, online customers most often chose wine, fresh vegetables and olive oil, as well as both fresh or processed meat, closely followed by natural cosmetics, with slightly fewer customers opting for fresh fruit, eggs and dairy products (Figure 3).

The second year of operation registered a meagre 21 orders. This was somewhat worrying but was also a signal of the importance of the need for constant promotional

activity in order to inform customers about the WFMA and indirectly encourage them to order online. Fewer orders may be explained by the lack of adequate delivery service, not organised at the WFMA level but rather defined and organised by each farmer individually. For a large number of farmers displaying their products in the WFMA, the only means of delivery is by having the buyer come directly to the homestead, which is generally not in line with the wishes of online customers. Besides product quality, quality of applications, and fair prices, quality of delivery is also considered a condition for running a successful business and maintaining customer satisfaction in an online environment (Lin et al., 2010; Al-Jahwari et al., 2018). Until the end of the evaluation, WFMA has been visited by potential buyers more than 250,000 times. From this number of visitors, a total of 149 purchases were completed, which is a share of just 0.06%.



Figure 3. Number of orders by product group in the first year of WFMA

Source: WFMA, secondary data analysis, the graph presents the period from 15th April 2015 until 23rd February 2016 (period of 1 year of implementing WFMA)

However, customers often use this application for the purpose of getting information about agricultural products. It is also important to highlight that every producer has contact details such as phone number, address, website and social media, if available, and most of the customers use those to connect with the farmers. Thus, WFMA serves mostly as a type of promotion media.

The impact of COVID-19 on the WFMA

In our analysis we compare the number of online orders made in the WFMA the year before declaring the pandemic situation and the year with pandemic measures.

By the end of February 2020, no online purchases were recorded, while already at the beginning of March, in particular 6th March, 5 online orders had been made – a 4-fold increase compared to the previous period. It should also be pointed out that, at the beginning of March, the media in Croatia broadcasted disturbing content regarding the impact of the Corona virus on human health, as well as the closure of borders and reduced food supply, which may be the driver behind increased online purchases of agro-food products (Figure 4). In the period of 30 days before declaring the pandemic situation, WFMA recorded just five online orders and all of these were made during March, when Coronavirus started becoming a burning issue in all the Croatian media, newspapers, TV, social media, etc.

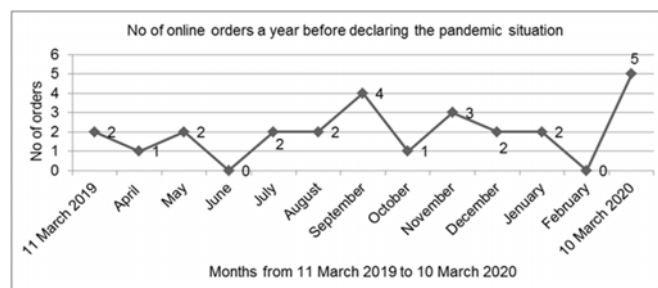


Figure 4. Number of online orders in WFMA in the year before declaring the pandemic situation

Source: WFMA, secondary data analysis, the graph presents the period from 11th March 2019 to 10th March 2020

The differences in the numbers of online orders in the month before declaring a pandemic situation and the month after declaring a pandemic is immediately visible comparing the Figure 4 and Figure 5.

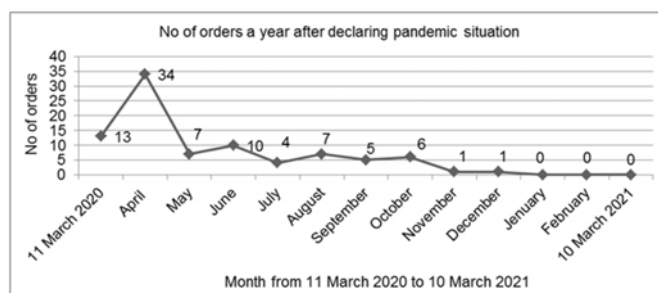


Figure 5. Number of online orders in WFMA after declaring the pandemic situation

Source: WFMA, secondary data analysis, the graph presents the period from 11th March 2020 to 10th March 2021

The number of online orders is growing rapidly since declaring the pandemic situation and enforcing measures of social distancing, which brought about a period of people mainly staying at home. WFMA's operation for a period of one year (from 11th March 2020 to 10th March 2021) was analysed. It is somewhat confusing that, in the period analysed, there was a significant drop in online orders over a few months following the pandemic outbreak, and moreover, no single order was placed in the concluding three months. We can link this phenomenon to the impact of the COVID-19 pandemic on people. In other words, the pandemic no longer causes fear of food shortages among the population. Instead, people are returning to their previous buying habits before the pandemic and purchases are again more frequent at physical stores. The structure of ordered products via WFMA following the declaration of the pandemic (Figure 6) was analysed. Online customers ordered mostly products for daily consumption, such as fresh vegetables, wine and natural cosmetics. The demand for olive oils also likely to be associated with the human need for consuming health-benefiting products (Sandalidou et al., 2002; Neves and Pires, 2018) and this trend is also noticeable in the period prior to the declaration of the pandemic. Furthermore, a notable spike in demand for honey was recorded, a product commonly related to treating illnesses such as the cold and the flu (Kumaret et al., 2010). Other products were slightly less in demand.

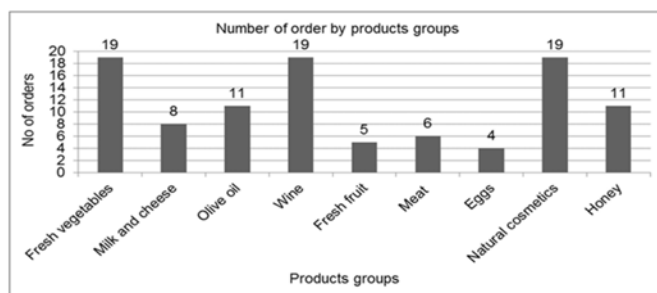


Figure 6. Number of orders by product group after declaring the pandemic situation

Source: WFMA, secondary data analysis, the graph presents the period from 11th March 2020 to 10th March 2021

An interesting fact between figure 3 and figure 6 is a change in the number of online orders in which milk and cheese are included. Before the pandemic, in the first year

of WFMA no user placed an order on milk and cheese. While during the pandemic these became the most sought-after products. The changes in other products ordered are not more significant than before and after the COVID-19 pandemic. The COVID-19 pandemic has changed significantly the habits of customers who have literally moved from physical shops to online stores for products. How experience with online purchases during the pandemics going to reflect in the future will depend primarily upon satisfaction with the first purchase made during March and April 2020 (Richards and Rickard, 2020).

CONCLUSION

Direct sale of agro-food products is justifiably the most common method used by small farmers. The benefits are mutual for producers and customers. In terms of direct sales, Internet sales are becoming the central trading method due to the COVID-19 pandemic.

Farmers show a strong interest in the WFMA as another way of direct sale and promotion. Furthermore, farmers who already have experience with online sales are more inclined to engage in WFMA. Users (farmers) using WFMA consider it useful for their business and easy to use. However, they are neutral in terms of the number of realised contacts and customer visits. Satisfaction with WFMA is larger for farmers who consider promotion to be important for their business, which leads to the conclusion that they see the application more as a medium for promoting their farms than as a channel for direct sales. Younger farmers also appreciate that promotion as an important part of the marketing activities of the homestead. The start of WFMA activity was a success by virtue of the promotion campaign intended to inform the public, resulting in the use of WFMA and online orders by customers. By discontinuing promotional activities, potential online customers moved away and no longer used WFMA services with the same intensity as they did immediately after the promotional activities. The situation changed following the outbreak of the COVID-19 pandemic, where online customers returned to the application without prior promotional activities

being implemented. In the month following the outbreak, the number of online orders increased compared to the previous month. Following the declaration of the COVID-19 pandemic, online customers used WFMA to buy products for daily consumption such as vegetables, natural cosmetics and wine. A noticeable change in online shopping habits is evident for dairy products, which are the most common choice of online customers during the pandemic, while this was not the case before the pandemic. One year after having declared the COVID-19 pandemic, people no longer fear food shortages and returned to their previous buying habits. More specifically, they re-acquired their pre-pandemic habits and prefer buying groceries and daily consumer goods at physical stores.

For future research, it would be worthwhile to check whether there have been consumer behavioural changes in online purchases following the COVID-19 pandemic. As far as WFMA is concerned, its greatest limitation is the issue of delivering goods ordered, as delivery is organized by each farmer individually. As a result, WFMA is, in fact, an online source of information for customers about the products they are looking for and the producers offering them. Therefore, in the future, for more successful development of the WFMA, it is commendable to consider enabling delivery by the application, and this is certainly advice when planning other online applications for online product sale.

The limitations of this study are reflected in the data collected via an online survey to be taken with reservation as they were obtained on a relatively small sample of respondents. Taking into account that this is a single empirical survey, we are able to gain a faint insight into manufacturers' attitudes towards and satisfaction with WFMA from the responses acquired, which may prove helpful in planning follow-up activities in the WFMA, as well as future research.

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