

DIGITALIZATION OF THE SALE OF AGRICULTURAL PRODUCTS AS A CHALLENGE TO THE CRISIS

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Abstract

The paper presents a study of the crises impact on the sale of agricultural products. The purpose of the performed research is to analyse adjustment of local agricultural producers to the sale of products in crisis. The analysis was conducted after the Covid-19 Pandemic as a basis for studying sales in the period of crisis. The aim of this work paper is based on the focus of digitization of the sale of agricultural products of small local producers. The conducted research is based on special knowledge methods application and marketing research methods. The theoretical research is based on the historical method. The method of survey was used for analysing experiences and attitudes of local agricultural producers and sellers at the Kvantaska market in Novi Sad. The research conclusion implies to changes in urban areas buyers' habits when it comes to crisis situations, and also the tendency to digitize purchase. The limitation of the research is connected to the disorganized digital sale of agricultural products and therefore the impossibility of overall effects measurement.

Key words: *agriculture products, digital sales, agriculture producers, urban environments, challenges of the crisis.*

Introduction

The Covid-19 pandemic that affected the world economy caused a work force, health and business crisis during 2020. In accordance to (UNDP, 2020a:3) one of the most affected areas of life is food supply, employment decline,

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trade, tourism and other areas, and also social protection. For the first time, a great pandemic of infection also affected the rich (Bjelajac et al., 2020). It follows from the above that the research goal, based on practical experience, is to adjust life and economy at the local level to the new system of work and development of potential. The emphasis of the research is on the local vegetable producers' adjustment from direct sales to digital tools, with the purpose of supplying the population with food, in this case vegetables. The fruits and vegetables sale on the market places is still mainly related to smaller producers, and also organic products producers (Kuzman et al., 2022). In organic production irrigation, water quality is highly important (Kuzman et al., 2019). The purpose of executed research is recognition of the possibilities of adjustment of local producers who sell vegetables wholesale (Kvantaška market), at the local level in for supplying the population in urban areas and building relations with rural areas. The functioning of the public sector is caused by the permanent satisfaction of the general and common society needs (Milojević et al., 2019). The aim is also the comprehension of urban-rural connections on the bases of the direct experience of sellers and applied practice. State grants are part of development and economic policy (Milojević et al., 2020). So, the main motive of government benefits is the increase of production and additional income. The basic determination is in the design of the financial system (Mihajlović et al., 2022). Organized groups with common interest of fresh domestic agricultural products purchase of are considered to be potential buyers using digital sales tools. Another purpose of this work paper is to objectify the possibility of digitization and digital sales that emerged during and after Kovid-19 pandemic conditions. The basic goal of sales digitization is generating an additional income, appliance of new technologies in production and sales, and the wish for business innovation. A closer look at the results shows that sales volume and sales promotion are directly dependent on daily and seasonal fluctuations (Prdić, 2019). The manufacturer's decisions depend on one's capabilities, market, expected benefits and costs (Kaiser et al, 2018). Solutions for innovative agriculture are sought more and more intensively (Kuzman et al., 2023). The modern economic system does not tolerate development neglect (Čavlin., 2022). Namely, technology, innovative agriculture and the overall modern economic system with the application of new sales channels form the basis for the future.

Material and methods

Reviewie of the registered agricultural producers in the area of Juzno-Bački district stored in the database of the tax administration, were taken as the basis for conducting research during May and June 2023. The research was conducted among vegetable growers selling their goods at the “Kvantaška market” in Novi Sad. A survey was conducted with a direct interview with sellers. The interviews lasted fifteen minutes on average. Producers’ attitudes were examined and measured using a Liker scale with possible answers from 1 to 5. The survey questionnaire was conducted on a sample of thirty (N=30) vegetable growers. The interview was conducted with the owners of small farms according to the tax administration categorization. They were referring to production and sales conditions during and after the pandemic, digital sales, as well as socio-demographic characteristics of producers. The collected data were processed using statistical data processing and presented in the form of tables.

Results and Discussion

The research was conducted on a sample of thirty (N=30), registered agricultural growers who sell vegetables at the Kvantaška market in Novi Sad. Manufacturers’ attitudes about doing business during the Covid-19 Pandemic, were measured using a Liker scale with five degrees of agreement as presented in Table 1. (Table 1). The grower’s opinion is that the demand for vegetables increased during the pandemic (mean = 4.38, standard error, SD = 0.58), as well as the number of customers (mean = 4, 11, SD = 0.60). Prices have increased during the pandemic (mean = 3.60, SD = 0.85). When it comes to sales, i.e. their increasing online (mean = 3.10, SD = 1.79). On the other hand, the opinion that online enabled better sales (mean value = 3.05, SD = 1.81), while attitudes about today’s sales are online (mean value = 2.33, SD = 1.49). When speaking about traditional sales as the most important in business (mean value = 4.36, SD = 0.70), and combined (mean value = 2.65, SD = 1.34), that is the view are vegetable growers. Focusing on digital marketing as a cost-effective and technologically acceptable activity (Resnick et al., 2016). During the last few years, there was an increasing trend in providing digital services such as e-commerce, development, software, web hosting and digital marketing (Kostić, 2023). Resilience to crisis implies adapting to new conditions (Bot et al., 2019).

Table 1. Vegetable grower’s attitudes about business and operations during the Covid-19 pandemic

Attitudes	Mean	Min	Max	SD
Vegetables demand during the pandemic	4,38	1	5	0,58
Pandemic increased sales (costumers)	4,11	1	5	0,60
There was an increase in prices	3,60	1	5	0,85
Greater online sales	3,10	1	5	1,79
Online enabled better sales	3,05	1	5	1,81
Today I sell online	2,33	1	5	1,49
Traditional selling is most important to me	4,36	1	5	0,70
Combined selling enables growth	2,65	1	5	1,34

Source: Author’s research

Official statistics of the Republic of Serbia monitor production (Subić et al., 2023). Peculiar activities can make contribution to sustainable development (Borović et al., 2022). The supply chain system is a serious and complex activity (Gazdić et al., 2022).

The analyze of respondents attitudes, shows the distribution of answers to research questions that vegetable growers considered to be significant for their products sales. From the aforementioned research, we see that the greatest number of respondents (65.8%) believe that sales distribution is the most important problem and that it needs to be improved and enhanced. The respondents gave the lowest percentage (27.2%) to the organization of production, so from the conversation there may be concluded that they have sufficient knowledge and abilities to work. When it comes to insufficient investment in promotion (40.8%), they notice a problem in that segment, while a similar percentage of respondents (42.8%) thinks that problem is the insufficient involvement of the ministry and other authorities that are able to make a contribution to the development of domestic local agriculture.

When it comes to the thematic unit of growers’ socio-demographic characteristics, we have the following data overview from the research, presented in table (Table 2).

Table 2. Socio-demographic characteristics of growers and size of property (N=30).

Variable	N=30	f	%
Sex	Male	14	46,67
	Female	16	53,33
Age	18-29	9	30,00
	30-45	11	36,70
	46-65	10	30,33
Education	Elementary sc.	0	0
	Secondary sc.	21	70,00
	College	8	26,70
	Faculty	1	3,33
Property size	< 1ha	1	3,33
	1-5 ha	29	96,67
Vegetable production	1	4	13,30
	1,5	6	20,00
	1,7	1	3,33
	2	5	16,67
	2,5	4	13,30
	3	5	16,67
	3,5	2	6,67
	4	2	6,67
	4,5	1	3,33

Source: Author's research

The questions from the questionnaire have answered 30 vegetable producers. By gender criteria, 46.67% of respondents are female, and by age the largest percentage (36.70) belongs to the 30-45 age group, while (30.33%) is from 46 to 65. If the education as a factor in the research, 70.00% of them have secondary school and 26.70% of have a higher vocational education. The property size they hold is from 1 to 5 hectares, and the distribution of production varies up to a maximum of 4.5 hectares. If there is intention that is strong enough, the probability of the behavioral outcome will be higher (Ulker et al., 2020). Consumers desire easily accessible and fresh products, and also easy consumption (Hamilton, 2018). Nowadays, social networks and advanced algorithms are used for consumer behavior analyze (Vladisavljević, 2022). The

strategy of enabling better arrangement and access to the market will certainly enable greater concentration of supply (Prdić, 2021). Differences in purchasing habits have influence on sales (Babić et al., 2023). Good information reduces risk and it represents an instrument for maintaining competitiveness (Gabril, 2023). Some countries achieve more with less investment in innovation (Ahmetagić et al., 2022). The previous authors point at the advantages of direct communication, but also consumers' turn towards "online" purchase of fruit and other agricultural products.

Conclusion

The Covid-19 pandemic has affected the production and sale of agricultural products both in the world and in our country. The crisis challenges posed a serious problem and question to many farmers about how to do business. The conclusion is that demand for agricultural products and therefore also for vegetables increased, and that also caused an increase in prices and online sales. Manufacturers think that internet sales during the crisis contributed to the sales increase, but they consider the traditional sales and its combination with digital sales to be their future priority.

The conclusion is that it is necessary in the future to organize digital sales, to make an infrastructure that would connect urban and rural areas, and also to reduce the large gap in sales in situations of crisis. The connection of producers and buyers in digital sales channels in this crisis has shown itself to be the only way of sustaining life in urban areas. The limitation of the research is related to lack of digital sales organization in our country, and thus the verification of the business effects. Also, the constrain refers to the rather small sample of surveyed vegetable producers at the "Kvantaška market", and a greater geographical distribution is necessary.

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