



Research on the Perception of Consumers Towards Digital Methods in the Agri-Food Trade in the Republic of Moldova

Ludmila Mogildea^{*}, Loredana Adriana Saghin (Dima)^{**}, Constanta Laura Zugravu^{***}, Alina Craciun^{****}

ARTICLE INFO

Article history:

Accepted August 2024

Available online August 2024

JEL Classification

Q11, Q13

Keywords:

consumers perception, digital methods, agri-food trade

ABSTRACT

We live in a technological age, an age of the digital economy, an age based on technologies. These innovations have brought about many changes in society, starting with people's lifestyles and ending with large international trade structures. The importance of this research results from the need for digital technologies for the trade of the Republic of Moldova. Following this phenomenon, new economic concepts and ideologies emerged. Digitization is now found in all areas of human society and has also influenced commerce, one of the essential branches of society. This article aims to research the public opinion regarding the digitization process and its influence on the agri-food trade, the dangers that come with this phenomenon and the importance of educating the population about these changes.

© The Authors 2024. This work is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/).

1. Introduction

In order to integrate the Republic of Moldova into the legal community framework and the digital market, by implementing the digital transformation project, the state aims at the radical transformation of the economy, the development of society and the well-being of citizens (Caminschi & Dorogaia, 2023; Ciobanu & Rosca, 2023; MOGILDEA et al., 2023).

Several priorities have been identified, one of which is the implementation of sectoral digital strategies and programs, with the aim of planning in detail the digitalization objectives and priorities of each key sector. (Andronic, 2023; Bickauske et al., 2021, 2022).

In this context, the economic, social and the environmental impact of food systems would therefore prove to be as important as the value the intrinsic nutritional value of the foods they generate. Thus, a sustainable food system could be defined by production, transformation, integrated distribution and consumption and resource generator that is socially just and accessible and supporting the development of local economies. Furthermore, interest appears to be growing in territorialized food systems, defined as sets of agri-food sectors that meet the criteria of sustainable development (Babin et al., 2022; Grecu & Dicusar, 2021; Popa, 2023).

2. Literature review

Market demand and available content are key elements for network development. With 98% of the population covered by a 4G signal and a similar fiber optic network penetration, users have the freedom to choose their preferred means of connection. Internet prices are relatively affordable and its use is widespread, with 80% of the population having access to Internet services in 2021 (Bulican, 2022; Ianioglo, 2023; Sobolieva-Tereshchenko et al., 2021).

The public services portal <https://servicii.gov.md/>, with an average of over 0.5 million unique visitors per year, is a one-stop shop for all public services, offering single sign-on access to 166 electronic services and complete and concise information about 531 other public services. The portal functions as an electronic catalog of public services for citizens and businesses and is aligned with the single digital portal of the European Union (Silivestru, 2023).

^{*}, ^{**}, ^{***}, ^{****} Dunarea de Jos University of Galati, Romania. E-mail addresses: ludmilacovganet@mail.ru (L. Mogildea), dim_lore@yahoo.com (L. A. Saghin Dima), laura.zugravu@ugal.ro (C. L. Zugravu), craciun.alina33@gmail.com (A. Craciun).

Various digital services immediately became even more in demand: distance studies, e-commerce, e-medicine, etc. Despite the fact that the authorities' commitment, oriented towards digital transformation, we still do not have a society ready to accept and use digitalization (Mirza, 2022), (Lungu & Cebotari, 2023; Silivestru, 2023; Weick, 2017).

The authors of this research presented the results of a social survey. It was carried out in order to determine the perception of consumers towards the digital methods implemented, determining the digital skills of the population necessary for agri-food trade, and the digitization of trade.

3. Methodology

With the aim of researching the aforementioned theme, the authors used a series of research methods: exposition, systematization, questionnaire investigation, induction and deduction, comparison, in order to describe and explain them. The survey, as a research method, aims to describe opinions. Surveys, unlike most other surveys, are faster, more efficient (Soare, I., Zugravu, C. L., Drasovean, R., & Zugravu, 2024).

On the other hand, the investigation makes use of complementary methods (observation, analysis, documentation). The survey on consumer perception of digital methods in agri-food trade was making on a sample of 292 people.

The given survey allowed the formulation of some conclusions regarding the consumer's perception of the digitization of agri-food trade and the development of the given sector. The results of the research will be presented through the graphic and numerical method. The graphical method is used to visually identify the trend in the data.

In the present paper, the following types of graphs were used: bar graph, circular graph. The numerical method is more objective and accurate. Since they complement each other, it is good to use these methods in combination. Any research is welcome to draw conclusions and present recommendations. These are carried out using the methods of synthesis and deduction.

4. Results

The survey on consumer perception towards digital methods in agri-food trade in the Republic of Moldova included 18 questions.

The first 4 questions in the survey included general participant data. These include: citizenship, place of birth, age and last level of education of survey respondents.

Questions 5-10 of the survey include data on consumer preference for shopping, product packaging, shelf arrangement, weighing, etc.

Topics 11-14 of the survey include results on the importance of digitalization of agri-food trade, questions 15-18 refer to the degree of satisfaction, degree of knowledge of digital methods and the danger of digitalization.

The Moldavian respondents participated in the proportion of 97.3%, citizens from other countries – 2.7%.

Of the total number of respondents, 58.6% were born in rural areas and respectively, 41.4% - in urban areas. The age of the respondents who took part in the survey is very varied and can be seen in figure 1.

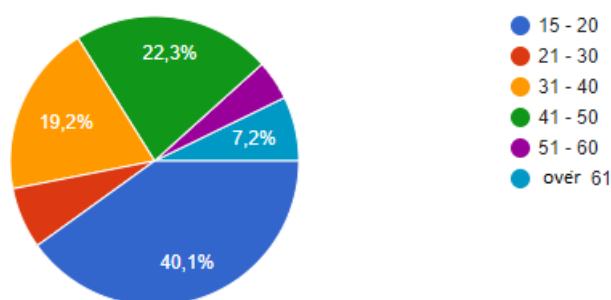


Figure 1. Distribution of respondents by age

The pie chart shown is a graph that represents the share of respondents who participated in the survey by age they reached. From the data in the graph, we notice that respondents of different ages took part in the survey: young, middle-aged, but also those of the third age. Out of 292 answers, 40.1% are young people aged 15-20 years, 6.8% - young people aged 21-30 years, 19.2% - people aged 31-40 years, 22.3% - people aged 41-50, 4.5% - people aged 51-60, and the rest are respondents who have passed the age of 61. We conclude that the participation of different age categories in the survey will allow us to express the most truthful and authentic opinions. The answers to the question about the last level of education of the respondents is illustrated in figure 2.

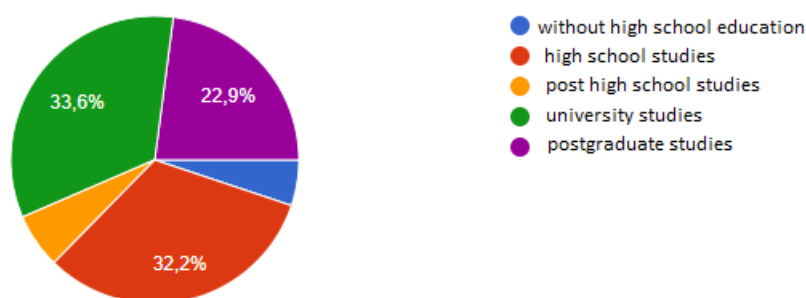


Figure 2. Respondents' last level of education

We note that 33.6% of the survey participants have university education, 32.2% - high school education and 22.9% - postgraduate education. 6.2% of respondents have post-secondary education, and 5.1% do not have high-school education. To the question: Which of the digital products or technologies are you familiar with?, the responses are illustrated in the bar chart in Figure 3.

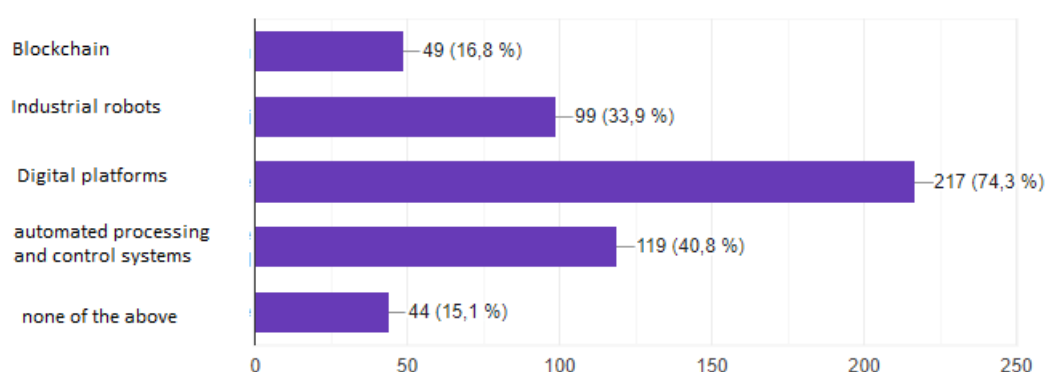


Figure 3. Known digital technologies

We note that a good part of the participants know about digital platforms – 74.3% (217 people). 40.8% of respondents know about automated management and control systems, 33.9% know about industrial robots and only 16.8% know about Blockchain. 15.1% of survey participants say they don't know any of the listed. 90.1% of respondents prefer to go to the supermarket, to the detriment of markets and online stores, and 68.5% choose the store depending on the assortment, preferring supermarkets with the most varied products. We note the preference of consumers to choose fruit and vegetables from the box (80.1%), and not those already packed (which only 19.9% of respondents prefer). Respectively, consumers prefer to weigh fruits and vegetables by themselves, on specially designed scales (59.9% of survey participants).

The answers to the question: How do you prefer to pay? are illustrated in figure 4. We note that most consumers prefer to pay at traditional cashiers. Also, a good part prefers self-service houses (40.4%). The remaining 6.8% feel more comfortable paying online. We can infer that the popularity of self-service houses is increasing; however, there is probably a need for the population to be more trained in their use.

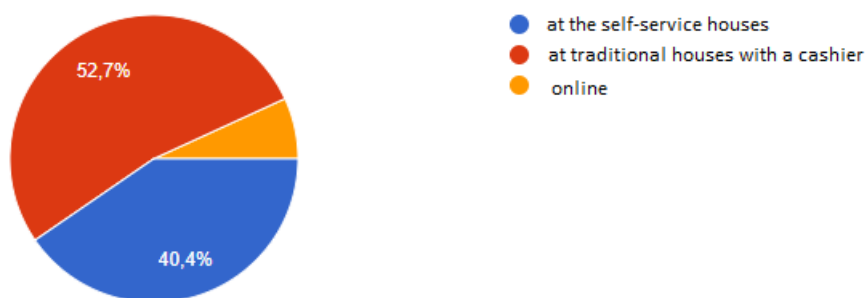


Figure 4. Consumer preferences for payment methods

Being asked about the importance of digitization as a solution for the development of agri-food trade, the respondents gave various answers, which can be seen in figure 5. 32.5% claim that digitization, in this

context, is extremely important, 61% - that it is important and even very important, and the remaining 6.5% consider digitization to be of little importance or even unimportant in this context.

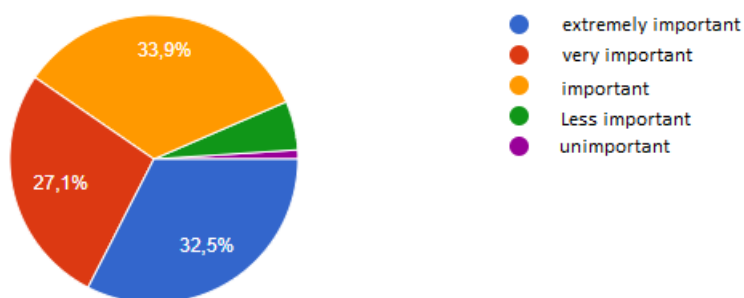


Figure 5. The importance of digitization as a solution for the development of agri-food trade

For the question: How important is covering the labor shortage through digitization in the development of agri-food trade?, the majority of the survey participants answered that it is important, very important and even extremely important (93.8% in total). On the other hand, 6.2% consider the process to be less important or even unimportant. (Figure 6)

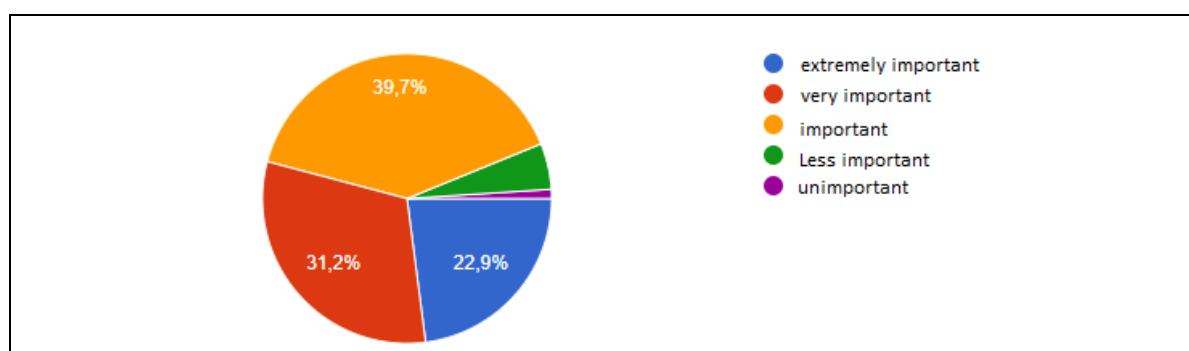


Figure 6. The importance of covering the workforce deficit through digitization

In order to determine the necessity of training the population in the field of digitization of agri-food trade, we asked the participants how important they consider training the population in this regard. The answers are systematized in the circular graph in figure 7. The majority of respondents consider this process as important, very important and even extremely important (95.2%). The remaining 4.8% see it as unimportant or unimportant. We can conclude that people want to be more informed about the digitization of agri-food trade.

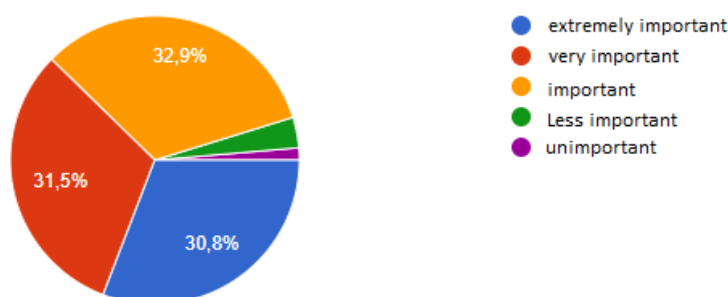


Figure 7. How important are the digital skills training programs regarding the digitalization of the agri-food trade

How important is the replacement of traditional labor with robots, in the field of agri-food trade?. This can be analyzed in figure 8. Only 7.5% of respondents see this phenomenon as extremely important, and 11.6% see it as very important. More respondents consider it important to replace traditional labor with robots (41.4%) and 9.6% claim that this process is completely unimportant.

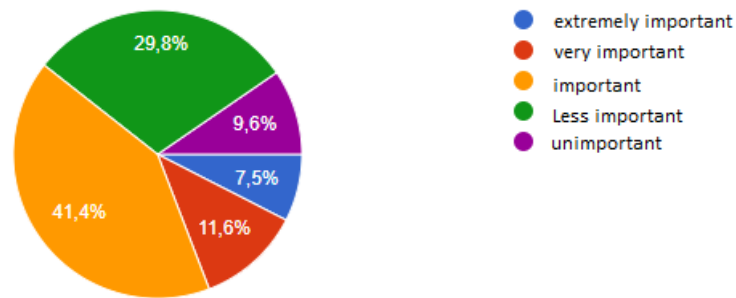


Figure 8. The importance of replacing traditional labor with robots

Endogenous and exogenous variables support these digitization processes, creating a close link between development, production and commercialization of agricultural products. Respondents generally have a positive perception towards electronic payment.

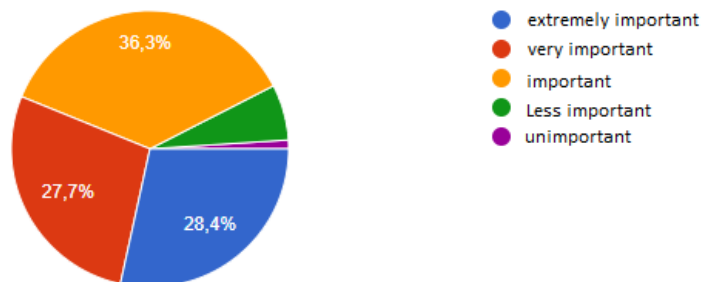


Figure 9. Respondents' perception in relation to electronic payments

When asked how they would classify the digital skills needed for the online agri-food trade, the survey participants believe that they possess good digital skills in proportion to 40.4%, very good – 30.1%, extremely good – 16.8%. 9.6% admit that they do not have very good digital skills, and the rest qualify their skills as very poor.

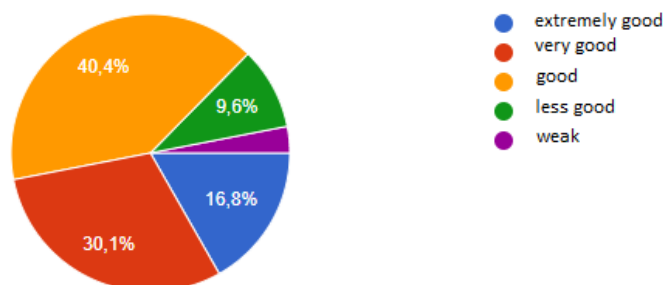


Figure 10. How respondents classify their own digital skills needed for online agri-food trade

When asked how satisfied they are with the digitization of supermarkets, the respondents answered according to figure 7. The majority are satisfied (66.8%) and even very satisfied (19.5%). However, 13% claim that they are not very satisfied, and 0.7% say that they are even dissatisfied with this process. (figure 11)

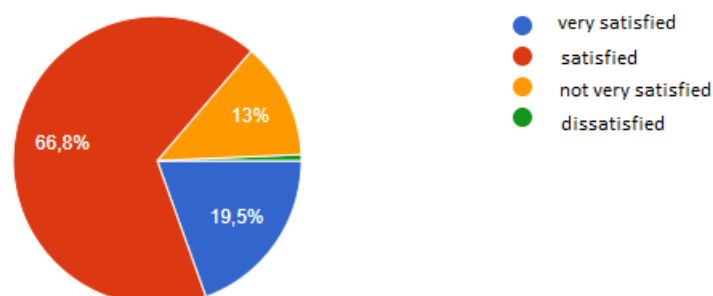


Figure 11. Level of satisfaction with supermarket digitization

When asked about the dangers of digitalization, respondents were divided in their views. These are illustrated in figure 12. Most believe that digitization has the effect of decreasing direct interaction between people (71.6%), and 45.2% believe that increased dependence on technologies would be a problem. 27.1% see the loss of privacy as a danger of digitalization, and 11.6% believe that being permanently connected at work will affect them as a result of digitalization.

5. Conclusions

In conclusion, we can conclude that agro-food companies still encounter impediments in several areas, such as finance, trade, technology and management, and the limitation of investments creates the impossibility of developing this sector. The underdevelopment of agri-food enterprises is also caused by the low level of competitiveness of the products, which, due to the used technology, cannot meet the demands of the market.

References

1. Andronic, A. (2023). Digital transformation in education: a comparative analysis of Moldova and Estonia and recommendations for sustainable financing. *Eastern European Journal of Regional Studies*, 9(2). <https://doi.org/10.53486/2537-6179.9-2.07>
2. Babin, A., Tutunaru, S., Cavaleco, I., & Babina, E. (2022). Smart Infrastructures for Rural Areas - Best Practices and Suggested Actions for Moldova. *Central and Eastern European EDem and EGov Days*, 341. <https://doi.org/10.24989/ocg.v341.9>
3. Bickauske, D., Kromalcas, S., Simanaviciene, Z., Sergiienko, L., & Baranovska, T. (2021). Digital transformation as a factor of ensuring country competitiveness: Moldova case analysis. *Independent Journal of Management & Production*, 12(6). <https://doi.org/10.14807/ijmp.v12i6.1779>
4. Bickauske, D., Simanaviciene, Z., Samorodov, B., & Kromalcas, S. (2022). Digital Transformation And Increasing Moldova Industry Swot Analysis. *Financial and Credit Systems: Prospects for Development*, 2. <https://doi.org/10.26565/2786-4995-2022-2-06>
5. Bulican, A. (2022). The Digital Transformation in the Hospitality Industry: Realities, Trends, Perspectives. *Journal of Danubian Studies and Research*, 12(2).
6. Caminschi, O., & Dorogaia, I. (2023). Digital transformation of smb in the Republic of Moldova. <https://doi.org/10.53486/icspm2022.51>
7. Ciobanu, R., & Rosca, M. (2023). Towards the democratic consolidation and digital transformation of the republic of moldova. *ACM International Conference Proceeding Series*. <https://doi.org/10.1145/3603304.3603354>
8. Grecu, M., & Dicusar, I. (2021). Influence Of The Economic Gap On The Level Of E-Government In The Developing Countries – Republic Of Moldova. *Pro Publico Bono - Magyar Közigazgatás*, 9(1). <https://doi.org/10.32575/ppb.2021.1.2>
9. Ianioglo, A. (2023). Alternative de finanțare a afacerii în Republica Moldova. <https://doi.org/10.36004/nier.cecgi.2022.16.15>
10. Lungu, T., & Cebotari, S. (2023). The political-legal framework of the Republic of Moldova regarding the digitalization of public services. *Studia Universitatis Moldaviae. Seria Stiinte Sociale*, 3. [https://doi.org/10.59295/sum3\(163\)2023_34](https://doi.org/10.59295/sum3(163)2023_34)
11. Mîrza, R. (2022). Covid-19 and Digital Rights in Romania, Moldova and Ukraine. *Central and Eastern European EDem and EGov Days*, 341. <https://doi.org/10.24989/ocg.v341.14>
12. Mogildea, L., Mogildea, I., Zugravu, C. L., & Zugravu, G. A. (2023). Digital Transformation Policy and Strategy of the Republic of Moldova. *Communications of International Proceedings*. <https://doi.org/10.5171/2023.4116223>
13. Popa, D. (2023). Digital transformation of the socio-economic system in the Republic of Moldova. <https://doi.org/10.53486/icspm2022.54>
14. Silivestru, D. (2023). The digital transformation of the national library of the Republic of Moldova: is it ready for the next decade of digital change or not? <https://doi.org/10.53486/9789975155649.51>
15. Soare, I., Zugravu, C. L., Drasovean, R., & Zugravu, G. A. (2024). No Title. Preprints. <https://doi.org/10.20944/Preprints202406.1609.V1>
16. Sobolieva-Tereshchenko, O., Moyseyenko, O., & Zharnikova, V. (2021). The development and transformation of the bank card market as an imperative for digitalization: The case of central and eastern European countries. *Comparative Economic Research*, 24(4). <https://doi.org/10.18778/1508-2008.24.30>
17. Weick, K. E. (2017). Perspective Construction in Organizational Behavior. In *Annual Review of Organizational Psychology and Organizational Behavior* (Vol. 4). <https://doi.org/10.1146/annurev-orgpsych-032516-113043>