

The Role of Digitalization as a Support of the Local Communities from the Rural Environment in Romania

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Abstract

The relationship between human, health and nutrition is one of the main concerns of our society. Food is the source of energy for the body, and science reveals nutritional principles maintaining the health of society using high-nutrition agro-food products and preparation methods that preserve these qualities of food. By giving the necessary importance to digital solutions in agricultural activities, it will be possible to feel their impact on the transformation of smallholder agriculture. Thus, through the Information Platform CPAC (Catalog of Certified Food Products) developed by AFIR (Agency for Financing Rural Investments) in partnership with the Ministry of Agriculture and Rural Development promotes and supports the consumption of products approved at national level (traditional, mountain products, with a well-established recipe) and at European level (products with a protected designation of origin - PDO or a protected geographical indication - PGI). The CPAC is an application that facilitates access to information centralized by the Ministry of Agriculture and Rural Development (MADR) on agri-food products registered on national and European quality schemes. CPAC created the direct link between the authentic producers of Romanian products and the public. Using an GPS map with a marked route, the manufacturer can be called directly from the web page and the feedback of other consumer can be displayed as a help for choosing something new. Also in this way, the manufacturers can promote their certified products and the local market can be developed in a better way.

Keywords

digitalization, local communities, rural environment, CPAC application, agro-tourism.

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Introduction

Studying consumer behavior, Euromonitor in the „Voice of the Consumer: Health and Nutrition 2021 survey, states that 64% of consumers think that the priority of general health is well-being. Studying this report, it can be concluded that the emotional and the mental have a great contribution to the purchase decision and to the return to tradition. The Covid-19 pandemic has influenced both our economic model and our way of life. Both consumers and producers have redefined their consumption and sale concepts so that consumer goods are still easily accessible. Social media platforms have demonstrated their potential by bringing to the public offerings of goods and services focused on consumers, need to eat healthy foods with higher nutritional quality, but also to protect themselves while ensuring their primary needs with minimal social exposure. The unique application CPAC in Romania paves the way for better consumer information, improves the decisions of buying good food and offers a wide range of products of certified quality.

In Romania, supporting local communities is still far from reaching its full potential. The concept of “from farm to fork”, “from farm to consumer” or “from farm to table”, already popular in Western countries, penetrates timidly entering our country as well.

Providing sustainable food sources with high quality and nutritional levels has become a priority for consumers, and some niche producers have understood and implemented the need. In order to see the impact of digitalization on certified food products on quality schemes, we can mention that the time of launching the CPAC application (July 2018) it included 230 producers with 753 listed products. Currently, 957 producers are registered in CPAC with 2883 products.

Given that the health of the population is part of the concerns of researchers in all fields, public and political debates, Romanian institutions have aligned their legislative framework to implement quality schemes and labeling of products of controlled origin. The demand for transparency regarding the origin of products, technology, e-commerce, and transportation offerings have created a series of opportunities for food tracking from producer to final consumer.

The tendency to consume local products is very important both from the desire to support small entrepreneurs, local farmers and thus to encourage the development of agriculture, but also to have as many products as possible “controlled origin” with nutritional quality to promote the great value of Romanian lands and farmers.

1. Literature review

The alternative supply of agro-food products gives consumers access to relevant information about small agricultural producers, practices and techniques used in obtaining production. The main information refers to: the place of origin of the agri-food product, the methods used in production (handmade, traditional or manufacturing type), the name of the farmer, the certifications obtained based on the recipe used attesting their quality (organic, DOC, PGI, TSG etc.) and last but not least, product traceability.

According to the communication of European Commission from Brussels to the European Parliament in 20.05.2020 - A "Farm to Consumer" strategy for a fair, healthy and environmentally friendly *food and the retail sector should illustrate the way forward by increasing the availability and accessibility of healthy and sustainable food options to reduce the overall ecological footprint of the food system. To promote this, the Commission will develop an EU Code of Conduct for Responsible Business and Marketing Practices, which will be accompanied by a monitoring framework. The code will be developed together with all relevant stakeholders.* "

Also, *“all farmers and all rural areas need to be connected to a fast and reliable internet. It is a key driver for job creation, for and for investment in rural areas, as well as for improving the quality of life in areas such as health care, entertainment, and e-government. High-speed broadband internet access will also allow for the widespread use of precision farming and artificial intelligence. This will enable the EU to fully leverage its global leadership position in the field of satellite technology. This will ultimately lead to reduced costs for farmers, improved soil management and water quality, reduced use of fertilizers, pesticides and greenhouse gas emissions, improved biodiversity and a healthier environment for farmers and citizens. The Commission aims to accelerate the deployment of high-speed broadband internet in rural areas in order to the 100% access target by 2025”*

The “From farm to fork” strategy, as well as other components of the European Green Deal, must be looked at with concern and impact assessments. A very complex regulation will increase the administrative burden on farmers and hinder the application of the basic principles of sustainable agriculture.

The five dimensions that characterize the efficiency and impact of digital public services in society as they are included in the research DESI - Digital Economy and Society Index of 2020 (European Commission, The Digital Economy and Society Index, 2020), are digital public services, capital human resources and connectivity, as well as the use of the global Internet and digital media and not in the last degree of their integration. As mentioned by the authors (48) / 2021, pp. 83 Alexandru Roja and Mihaela Boc in the paper „Digital public administration - proposal for a digital transformation model of Public Institutions,, Transylvanian Journal of Administration Sciences 1 –105: „, all five dimensions specific to the DESI study have a major impact on the digitalization process and are convergent in terms of increasing digitalization capacity. As can be seen in the Composite Index of the DESI study published in 2020, Romania is behind the European average in all five dimensions, being in line with the ranking in terms of digitalization of public services”.

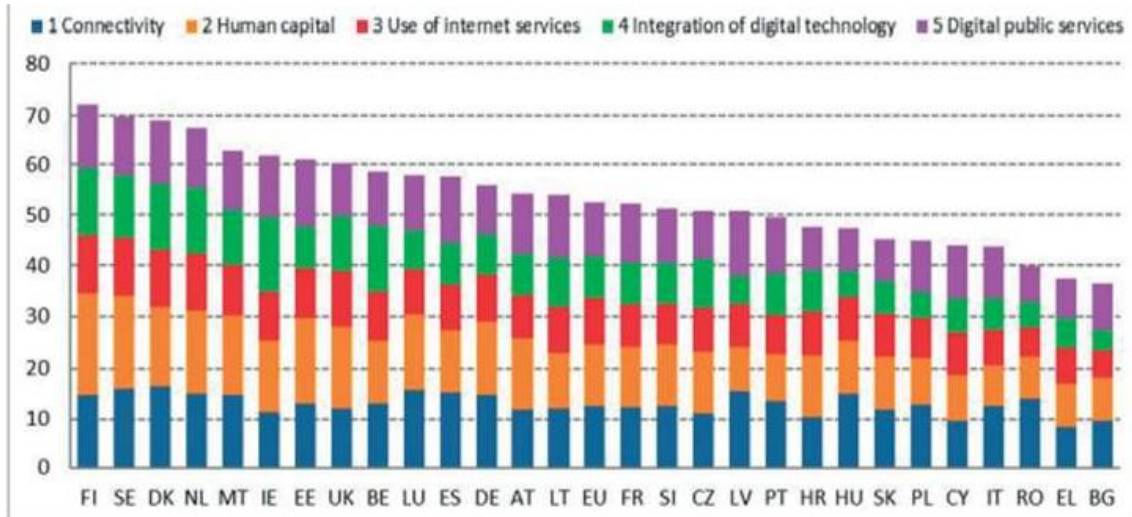


Figure no. 1. Composite index DESI

Source: European Union, Eurostat

Those who master the data master the future (Yuval Harari in the book: “21 lessons for the 21st century,, Polirom 2018 publishing house, in chapter 4, pg. 83) and the race to obtain them has already begun. Even if you do not know how to take advantage of the data today, it is worth having, because it could be the key to controlling and shaping life in the future,, says the same author on pg. 88.

On the other hand, it is well documented in the literature that the use of digital technologies can influence other measures of social welfare, such as gender equality and women empowerment (Martin Hilbert, 2011) but can also involve challenges, limitations, and risks in particular. for small farmers and for women.

Globalization has certainly brought benefits to some important parts of humanity, but there are signs of growing inequality both between society and within them (Yuval Harari, pg.84, 21 lessons for the 21st century Polirom 2018 publishing house)

Several studies highlight the fact that in the event of a health crisis, the proper functioning of agri-food supply chains influences food and nutrition security (FAO 2011, FEWS NET 2010).

2. Methodological framework

The aim of this study was to briefly review the impact of the digital solution on the transformation of small farmers’ agriculture, as well as the challenges that influence the digitalization of agriculture in Romania. We used a comprehensive approach that includes original research articles, work papers, peer-reviewed articles, conference papers, databases, book chapters, guides, and indicators from other European countries such as Austria or the UK.

Our conclusion shows that when the digital solution is used properly, consumers benefit from real-time access to information about authentic manufacturers in Romania is improved. At the same time, it is also known that for small producers, the valorization of production can constitute an obstacle due to the distances to the points of sale or the costs of transportation, marketing, etc.

It is essential to invest in digital technologies that are adaptable to the target population and in providing digital skills training to farmers by segregating them by gender, age, and education in order to make full use of the opportunities of digitalization in agriculture. It is known that for small producers, the valorization of production can be an obstacle in terms of distribution costs, marketing, access to various markets, although their products are qualitatively superior to other agro-food products.

3. Results and discussions

Outside Romania, there are many hotels, boarding houses and agro-pensions that have made their own vegetable gardens or small farms, to ensure that their guests consume local products, verified and of the highest quality. For some this concept has become a and at EU level more and more importance is given to this initiative, the idea being included in the European Green Pact through the Farm2Fork Strategy developed by the European Commission.

According to Euromonitor report published in 2021, Romania ranks 28th in the world in terms of sustainability in the field of tourism, the analysis being performed for several 99 countries in terms of ecological, social and economic sustainability, country risk, as well as the current demand for sustainable tourism, transport and accommodation services. Thus, Romania ranked in front of countries with weight, such as Australia, Greece, Italy, Japan or even Great Britain or the USA, a country that gave birth to the "Farm-to-Table" concept, Ziarul Financiar claims, citing a published Euromonitor report in 2021.

From EU decision-makers, farmers should be guaranteed that when environmental standards for food in Europe are raised to comply with the European Pact, imports of agri-food products also meet these standards. In this way, the products of small farmers will not be replaced by cheap food from other countries, where environmental standards may not be as high as in the EU.

The presence of fraudulent food on the market generates a degree of distrust on the part of consumers according to the Romanian Employers' Federation of the Food Industry - Romalimeta.

Food authenticity is represented by a certain origin and in accordance with the standards and norms in force. The criteria that define the authenticity vary from one product to another, the most notable being: geographical origin, animal, or botanical origin (raw material), type of raw category (conventional, organic, ecological, genetically modified agriculture), processing and conservation technology, year of production (especially in the case of wines).

In Romania, there have been cases of food fraud. and employers claim that 25% of black bread in the market is counterfeit. Similar situations have been identified over time on the Romanian milk market and the Council of the European Union has acknowledged that the process of illegal trade in counterfeit food is a global problem, which requires action in cooperation with non-EU bodies. MADR considers this situation to be severe and goes further, estimating that the greatest vulnerability goes to meat, milk and dairy products, certain varieties of bread, honey, wine and alcoholic beverages and olive oil. Consumers must have products that have intrinsic nutritional value and do not endanger the human body (safety).

Certain aspects of household behavior, quality of family life in rural areas, spiritual habits and practices, demographic structure, external migration, education, infrastructure, access to digitalization, high speed internet access, are aspects that must be considered in the analysis. on the success of the implementation and implementation of the catalog of traditional products that could benefit both small farmers and the consumer willing to consume traditional products, certified and quality in terms of nutrition for the body.

The age structure of the resident population in Romania is very important in the realization and implementation and functioning of the digital solution considering the level of knowledge of smart technology.

According to the INSSE, on July 1, 2019, the resident population in rural areas was 8,917,774 people, of which young people up to 14 years old were 1,439,537 people, adults between 15 and 65 years old were 5,651,042 people and elderly people aged 65 and over were 1,827,195 people. According to the data mentioned above, the share of young people in rural areas was 16.14%, the share of adults was 63.36% and that of the elderly was 20.48%. Even if these data would show, according to studies (Rotariu Traian, 2009, Iftimoaei Ciprian 2018) that the Romanian rural population has an aging population, and that respecting the proportionality when the share of the population aged 65 and over is 7 % of the total population, the demographic aging begins, the adult population of 57% expressed as a percentage, can be considered the target population that can fully capitalize on the opportunities of digitalization in agriculture.

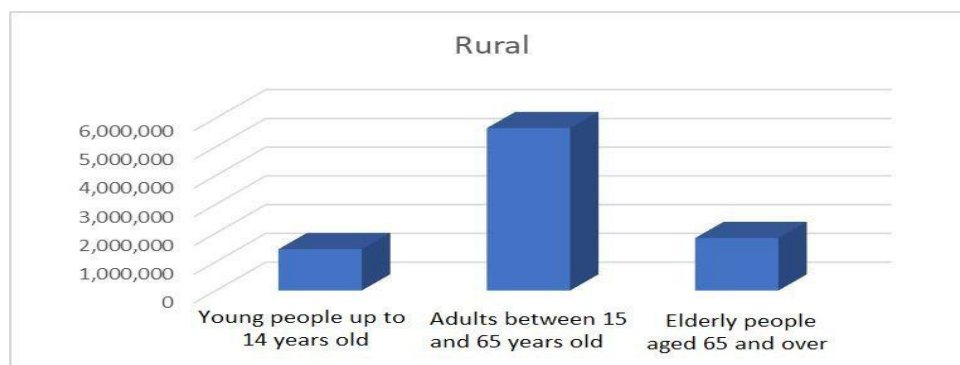


Figure no. 2. resident population in rural areas
Source: Author self-conclusion according to INSSE

Developing and implementing a concept for a pilot application used on mobile devices with android and IOS operating system can help promote traditional Romanian products certified on Romanian and European quality schemes, while ensuring their traceability.

The application currently provides the following feature: Functionality to accurately identify and locate Romanian products, which have already been approved at national level (traditional products, mountain, with established recipe) and at European level (products with protected designation of origin - PDO or protected geographical indication - PGI).

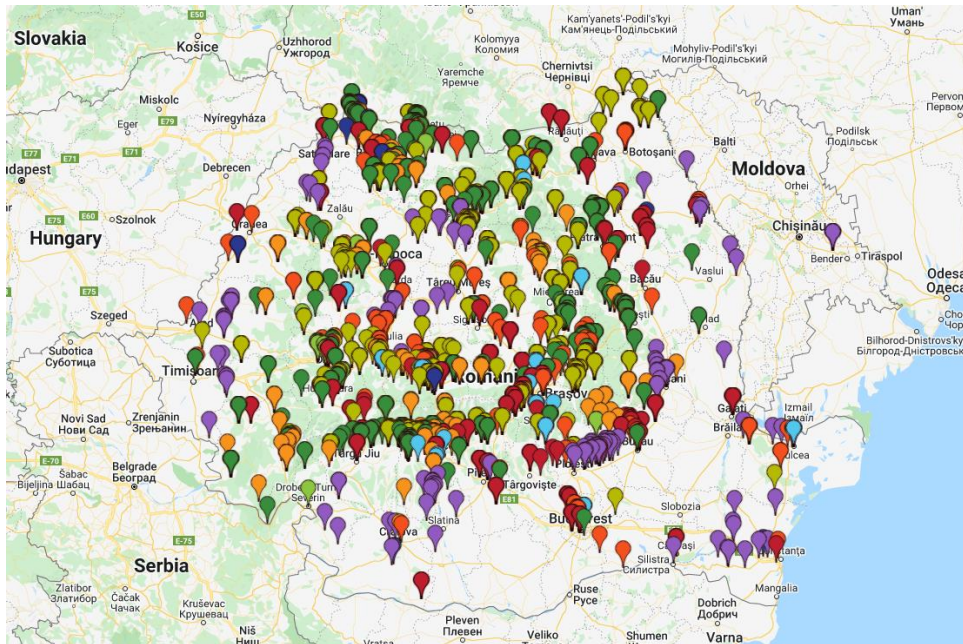


Figure no. 3. Representation on the map of the producers
Source: Application GPS prototype

A web portal through which the producers to authorize / certify new products, without having to go to the headquarters of the County Agricultural Directorates to submit their files to certify the products.

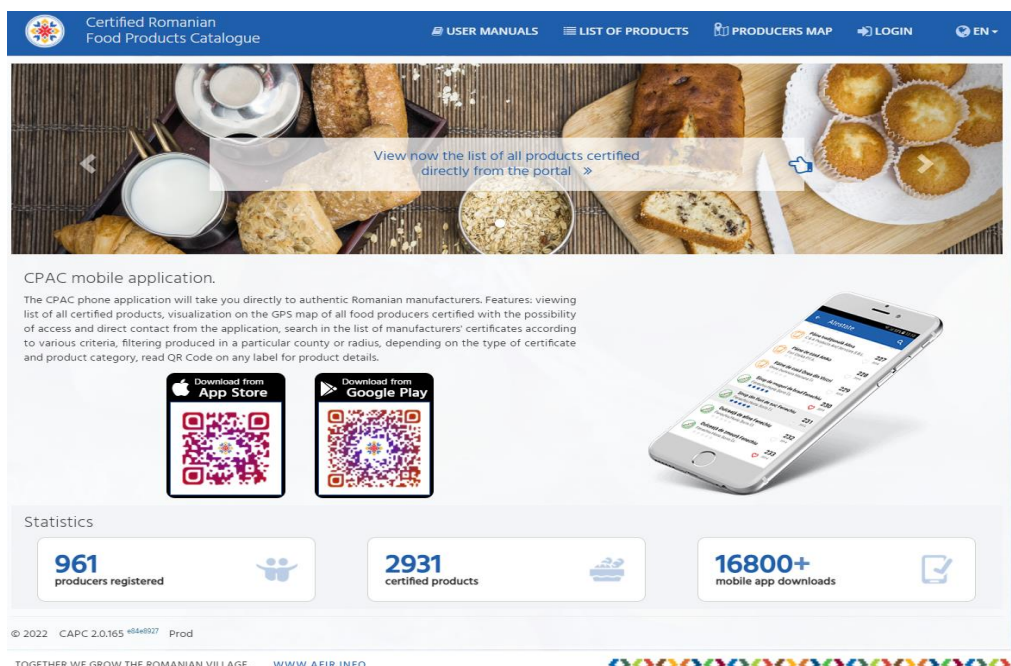


Figure no. 4. The main page of the web application
Source: Application prototype

The application allows in fairs, markets, stores, through the function of scanning the QR codes on the product label, to verify the authenticity of the products, thus ensuring that what you consume is an authentic product and not a counterfeit one.

In the future, an application-level functionality that presents the quantity made for each food product, as well as the certification that that product has in the recipe exclusively the main ingredients of local origin, would be useful for the consumer and would bring more security to him. respectively, the fact that what you consume is in accordance with the information on the product label.

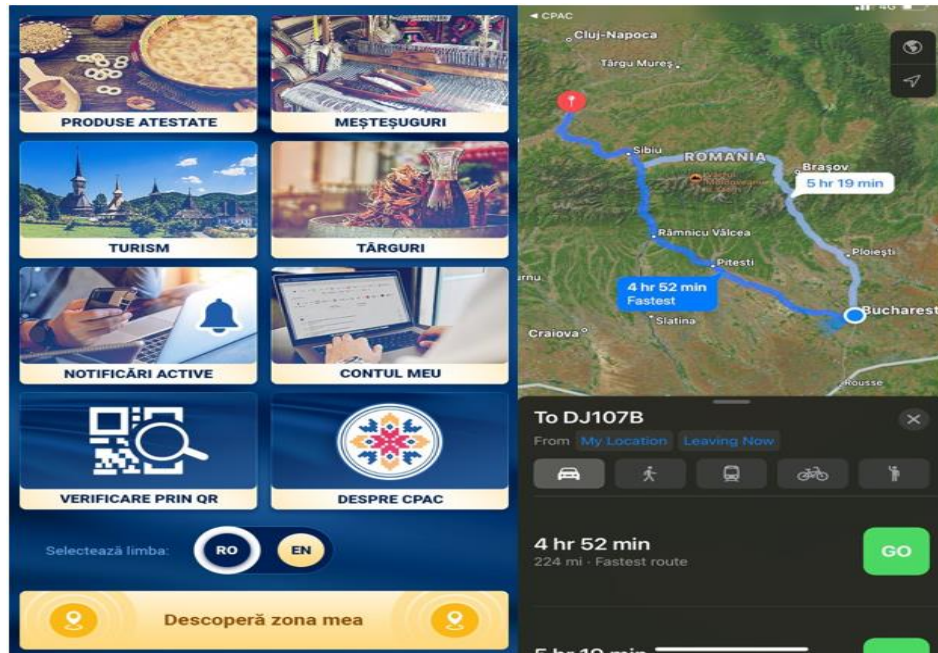


Figure no. 5. Mobile application pages

Source: Application prototype

Considering that the application must be easy to use by consumers who do not have special digital skills, it also has other functions such as:

- Search for products and manufacturers by name and certificate number.
- Map display of manufacturers with the ability to navigate through maps (e.g., Google maps, Waze, etc.) to a manufacturer,
- Filtering products and producers according to the type of certificate (Traditional Product, Consecrated Recipe, PDO, PGI, Mountain Product), product category, manufacturer's county.
- Visualization of the distance to the place of sale of the product (it is necessary to activate the location system of the device);
- The ability to evaluate a product - functionality that on the one hand helps consumers to identify products appreciated by others but can on the other hand motivate the manufacturer to make high quality products throughout the year.
- Access to pensions, agro-pensions, information centers and existing tourist recreation centers in rural areas.

Conclusions

In conclusion, to increase the degree of access to public services offered to citizens, in the present case of certified food producers, the creation of a portal to facilitate the modification of products directly by the producer and to offer the possibility to submit online authorization documentation is of real use, including in the context of the Romanian Government's strategy related to digitization. Given that the application can help define a country brand, it can also be downloaded by tourists, foreigners visiting the country, it allows viewing information both in Romanian and in English.

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