

MARKET RESEARCH ABOUT AGRISO MOBILE APPLICATION FOR FARMERS

Gabriela-Lucica MĂRGĂRIT, Radu TOMA, Diana GROPOȘILĂ-CONSTANTINESCU,
Dana BARBA, Gabriela POPA, Radu-Daniel POPA

University of Agronomic Sciences and Veterinary Medicine of Bucharest,
Faculty of Biotechnologies, 59 Marasti Blvd., District 1, 011464, Bucharest, Romania

Corresponding author email: gabriela.margarit@biotehnologii.usamv.ro

Abstract

Nowadays, the use of smartphones has multiplied the utility of the phone, making it an extremely useful tool for different purposes. From young to old, the mobile device became extinct of a hand full of information from school, family, social, online shops, analysis laboratories, etc. Starting from their own experience and needs to exploit mobile devices, AgriSo mobile app developers created an application structured to help farmers have access to land much easier, oversee remote work running on their land, fuel used equipment when work but even when stationary with the engine running. AgriSo also provides information on the ground, how much need to increase humidity or lower it because the plantation to have a better result, define type of soil and what can be cultivated on it. Based on this application we have done a survey whose results are presented in the paper.

Key words: AgriSo, market research, mobile devices.

INTRODUCTION

Mobile applications are useful and can make life easier. Apps nowadays can help us to solve decision processes more easily and in the simplest way. Mobile applications can be used by anyone: pupils, students, or people from various fields, with different occupations. As examples of applications created for different domains, we have:

- Tripadvisor - tour guide;
- Weather - weather;
- Metro and Feroviar - for public transport;
- Google maps - orientation in space;
- Google Translate - for translations;
- Social media phone applications: Skype, Facebook, WhatsApp, Telegram, etc.

In Romania, we meet six types of applications used:

- A farm management application: AgriSo;
- A transport stock Exchange: Kropapp;
- Monitoring of real-time: crop Agricloud;
- A temperature control in the silo: Silometer;
- A detection of diseases by drones: Serafim Drones;
- Satellite culture surveillance: Geosys.

In this paper, we focused on the application "AgriSo", created by two young people, intending to easily track agricultural land and

monitoring problems to quickly make decisions regarding the good functioning of crops.



AgriSo - agriculture from the land to satellite

The application has been designed precisely to help farmers gain access to land more easily, to remotely monitor work on their land, the fuel used by the machines at work, and even when stationary with the engine running. "AgriSo" also provides information about the field, how much moisture needs to be raised or it needs to be low for the planting to produce the best possible result, tells us the type of soil and what we can cultivate on it.

The "AgriSo" application is tested by several farmers in Romania, Ireland, Ukraine and South Africa.

The utility of the AgriSo application:

- can be done satellite or drone scans where we can see problem areas and improve them;

- this is the application that monitors fuel consumption using satellite technology. This can help a farmer reduce costs by 25%;
- this is a digital farm management application to help improve the production processes of the crop sector for both small and large farms,
- we can also track production flow;
- we can make a check on the agricultural land,
- the fuel consumption can be checked at each technological stage.

For instance, in Figure 1, we show how we can be observed plantations according to what we grow on them.

Yellow plantations are those on which wheat has been grown and green plantations on which rape has been grown.

The intensity of the color shows the evolution of the plantation thus, we can see how it has developed and we can tell when we can harvest it.



Figure 1. Screenshot-Satellite view Agricultural Land

In our study, we want to gain information about the level of knowledge regarding the AgriSo application and the wish to use this application by the young population of farmers and future farmers.

MATERIALS AND METHODS

As we wanted to carry out market research on knowledge and use of the AgriSo application developed for farmers, we conducted our study through the basic survey tool (questionnaire).

The usefulness of the questionnaires is provided by different categories of information: the prioritization of needs, preferences, attitudes, consumption or purchasing habits, consumer motivations, and so on.

Also related to utility, reference is made to the persons interviewed to whom the categories of information mentioned may be associated. Thus, information on certain market phenomena or processes is circumscribed to the specific characteristics of the reference authorities.

For example, for the population, it is possible to collect information at the level of the various segments depending on sex, age, education, occupation, geographical area, residence environment, income achieved, structure and size of the household.

This data can be obtained more easily via the Internet.

The information obtained from the questionnaires is quantitative and qualitative and can be detailed according to certain criteria to allow a thorough knowledge of market aspects that cannot be addressed based on data from secondary sources.

In the case of our questionnaire, its administration was mostly done online through the iSondje.ro service.

The questions to which our questionnaire was intended to be answered were those who own agricultural businesses or who will take over the family business being in this area because the application studied is strictly logged into the location of the business in the field and provides all the data related to the state of the crop in that area.

The method used is a quantitative method related directly to an online survey.

RESULTS AND DISCUSSIONS

The size of the sample to be researched shall be determined by the degree of homogeneity of the Community, the extent of the probability error and the likelihood by which the results obtained from the time involved in the data collection are guaranteed and by the funds involved in the research.

If we consider the probability used to guarantee the results to be 95% ($z=1.06$), then for error = $\pm 5\%$, the volume of the sample will be:

$$n = \frac{z^2 \times p(1-p)}{\Delta_w^2} = \frac{1,06^2 \times 0,5(1-0,5)}{0,05^2} = 112 \text{ persons}$$

Statistics of respondents

Our questionnaire started with 112 people, but 16 people did not want to mark any of the answers to question 3, so our questionnaire continued with 96 interviewees.

Criteria	Characteristics of the respondents
Male	68
Female	28
Total respondents	96
Average age	25.8 years

The first question was about the nature of the occupation because we want to know what are doing the respondents on our study, so we find out that most of the responders were students, followed by the employee, as it can see in Figure 2.

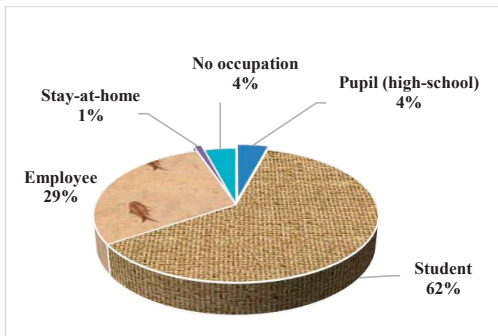


Figure 2. Respondents' nature of occupation distribution

The second question regards the education level, to understand if our respondents (not those who are students in the interview time) have a high-level education in the background, or plenty of work and life experience, or a mixture of those elements (Figure 3).

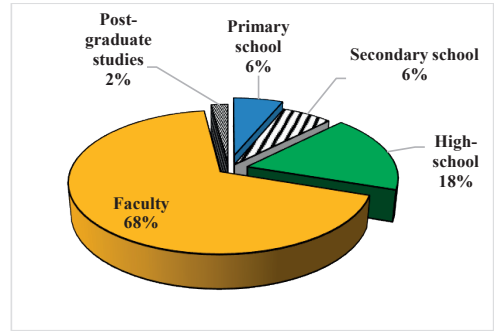


Figure 3. Respondents' education level distribution

When our respondents came on question number 3, from various motives, some of them do not want to answer. So, we adjust our questionnaire from 108 to 96 interviewees.

The sensitive question was about monthly incomes, and like we have shown the answers in Figure 4 most of them, over 70% have incomes under 2,500 lei.

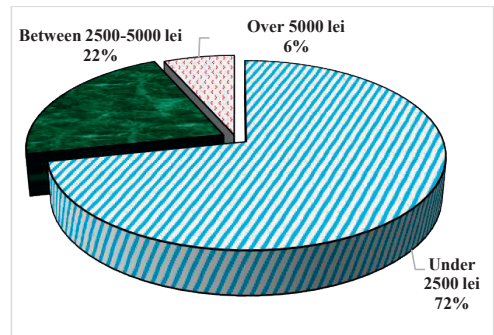


Figure 4. Respondents' education level distribution

The last demographic question is bounded to the area of living. So we divided into three areas such as urban, suburban and rural (Figure 5). We introduce the sub-urban element to gain data about the influence of the urban environment on the rural environment.

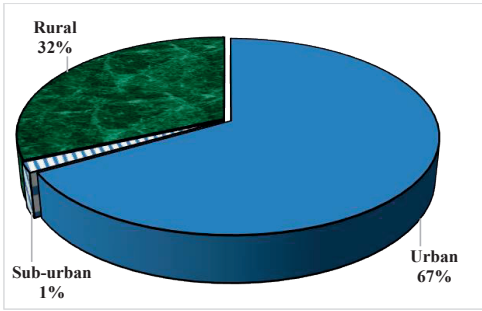


Figure 5. Respondents' area of living distribution

With the fifth question, we reach one of our items, to gain information about the level of knowledge regarding the AgriSo application, as a useful instrument in farm management. So, at the question "Do you know the AgriSo application?" we have determined answers Yes or No. The distribution of those answers is shown in Figure 6.

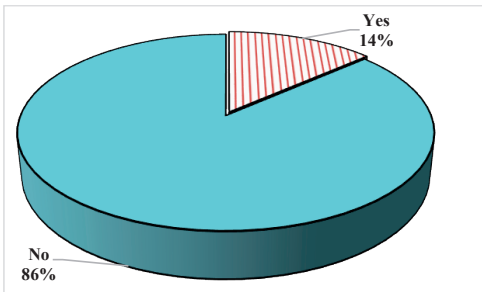


Figure 6. Respondents' Yes or No knowledge about AgriSo app distribution

We go on the next level and ask further, what respondents believe: AgriSo can be (or is) a useful application for agriculture or not (Figure 7).

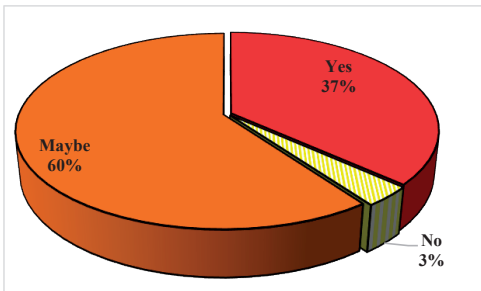


Figure 7. Respondents' answers for AgriSo - a useful app for agriculture distribution

This time we reach the second goal. Did the young farmers and future farmers wish to use the AgriSo application? The data gained is presented below in Figure 8.

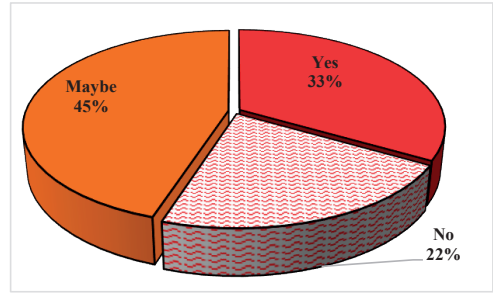


Figure 8. Respondents' wish to use the AgriSo app distribution

The next question is designated to verify if some of our respondents already use this application as an instrument in their farm management (Figure 9).

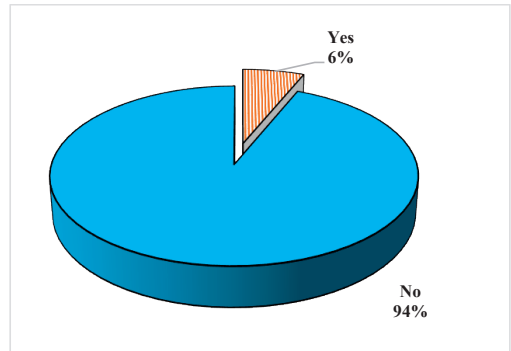


Figure 9. Respondents' that already use the AgriSo application

Of course, we want to know the opinion about the difficulty level in using this application. In Figure 10 we present the distribution of answers between simple, easy to use and complicated, difficult to use.

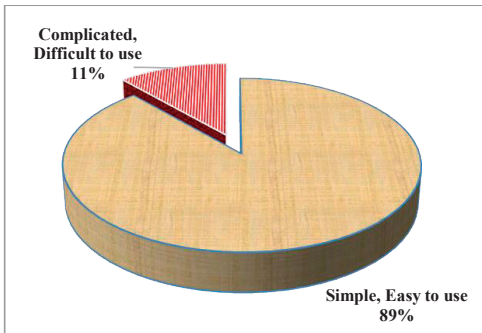


Figure 10. Respondents' opinion about the difficulty level of the AgriSo application

The last question ends in just ten ones in our interview. Most of the respondents consider that the AgriSo application can help them to grow more and more in their business (Figure 11).

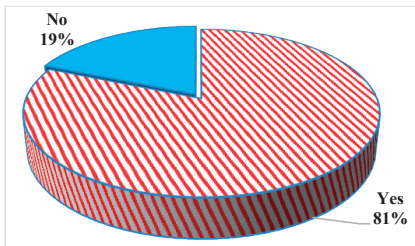


Figure 11. Respondents' opinion about AgriSo application as a useful instrument in farm management

CONCLUSIONS

We are at a time of rapid change in all domains. Our study shows the increased interest of young people in the AgriSo application shows a possible desire of young people to make their own business in the agricultural sector to which to apply knowledge from faculty and the farm monitoring technology through the AgriSo application. The processing of demographic data showed that 68% were university-level respondents, while the lowest percentage was registered for post-graduate, secondary or primary school persons, 72% were those with monthly income below 2500 lei, only 6% of the respondents are over the income of 5000 lei. In urban areas, the majority of respondents live, 32% are rural residents and the difference of up to 100% is represented by people living in satellite locations near urban centers.

Only 14% of respondents know the AgriSo application, so this questionnaire also allowed those who did not know it to have basic information about this application.

37% believe that the AgriSo application is useful for agriculture, while 60% are undecided individuals who are expected to look further into this application and give a decisive response later. The high percentage of undecided people give a similar answer to the next question, about 45% may use the AgriSo application, while about 33% will certainly use it.

Regarding the application interface, 89% thought the application is simple and easy to use. 81% of respondents consider that the AgriSo application is a real aid to the activity (business) they have or intend to do, this shows the favorable opinion the interviewees have on the application being studied. The interviewees also emphasized that the application can be a future application, help us in the field of agriculture and help us to grow more and more even in a very easy and possibly less expensive way.

At the moment some of the people who responded to our study do not benefit from this application, but possibly after completing their studies those who want an agricultural activity will access the application that will certainly thank them, as we can see in the questionnaire, they marked in a number quite large that they like the application.

REFERENCES

- Balaure, V. (2000). *Marketing*. Ed. Uranus, București.
- Colibaba, D. (2001). Chestionarul instrument valoros în cercetarea pieței. *Rev. Infomatica 12 Economica*, 3/19, București, 62 pp.
- Dubois, P.L., Jolibert, A. (1994). *Marketing teorie și practică*. Vol. I, Ed. Economică, Paris.
- Labăr, A.V. (2008). *SPSS pentru științele educației*. Ed. Polirom, București
- Papuc, M. (2004). *Tehnici promoționale*. Ed. Universitară, București.
- Rapp, S., Collins, T. (1999). The new maximarketing.
- Sanador, S. (2011). Metode și tehnici de cercetare în științele sociale. *APPUB*, 174-175.
- Xardel, D. (1994). *The direct revolution*. Blackwell Pub.
- ***<https://agriso.ro>.
- ***<http://www.careercenter.ro/resurse/mk/13motive.pdf>.
- ***<http://www.dentsu.com/museum/m2t/part1/index.htm>.
- ***<http://www.dma.org.uk/content/home.asp>.
- ***http://www.fedma.org/code/page.cfm?id_page=106.
- ***<http://www.mro.com/>.