Journal of Agricultural Sciences (Belgrade)
Vol. 70, No. 2, 2025
Pages 205-217

https://doi.org/10.2298/JAS2502205B
UDC: 638.1:004.738(497.11)
63: 005.591.6(497.11)
Original scientific paper

E-AGRAR PLATFORM: ASSESSMENT OF BENEFITS AND USAGE CHALLENGES FROM THE PERSPECTIVE OF BEEKEEPERS IN SERBIA

Bojana S. Bekić Šarić*, Vesna T. Paraušić and Lana M. Nastić

Institute of Agricultural Economics, Volgina 15, Belgrade, Serbia

Abstract: The aim of the research is to understand beekeepers' attitudes towards the usefulness and usage challenges of the new government electronic service in agriculture – eAgrar. This service was launched in 2023 by the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia and the participation in this platform is mandatory for agricultural producers who want to participate in the national subsidy system. The data for this paper were collected during 2023 by using a structured online questionnaire. The number of respondents was representative (459), while purposeful random sampling ensured anonymity and credibility. Data processing included the application of descriptive statistics, the chi-square test of independence, and the Word Cloud tool. The majority of respondents (81.0%) think that they will benefit from the introduction of this platform, as it will make all administrative procedures faster, easier, and cheaper. For 64.7% of beekeepers, the platform is easy to use. About one-third of them find it somewhat challenging to use and rely significantly on the support of agricultural extension officers. Furthermore, there is a statistically significant positive correlation only between the respondents' level of education and the level of difficulties in using the eAgrar platform. The results of this study are expected to provide agricultural policymakers in Serbia with insights into different aspects of the practical application of the eAgrar platform and also contribute to enriching the scientific knowledge about the application of new technologies in agriculture.

Key words: e-government, agriculture, survey, Republic of Serbia.

Introduction

Digitalization in agriculture is a consequence of technological progress and the widespread process of globalizing economies and societies. According to the EC (2017), it is an essential tool for redesigning food production in the near future which helps to maintain, renew and strenghten rural communities, i.e. to transform villages into the so-called smart villages. Generally speaking, greater digitalization of agriculture increases its competitiveness and leads to a higher level of

*Corresponding author: e-mail: bojana_b@iep.bg.ac.rs

investment in this sector (Safiullin et al., 2021; Mushi et al., 2024a). Digitalization is mainly associated with the so-called Agriculture 4.0 technologies (robots, drones, IoT and alike), whose aim is to produce more high-quality food while investing fewer resources. One aspect of digitalization in the sector of agriculture refers to using various electronic platforms developed by governments (e-government, eAgrar, etc.) for registering agricultural producers, providing subsidies, trading agricultural products, monitoring production, etc.

The analysis of ICT application in agriculture, in over one hundred countries worldwide, has shown that the application of e-agriculture is still modest and in its early stages of development when compared to other sectors of economy (Alassaf and Szalay, 2020). Nevertheless, the usefulness of e-government in agriculture has already been confirmed in many rural areas in different countries. For instance, in Malaysia, rural inhabitants believe that the e-government system in agriculture results in better work performance, making them more productive and consequently leading to higher incomes (Kamarudin et al., 2021). Furthermore, e-government in agriculture in Bangladesh has led to significant improvements in the agriculture sector: farmers have gained access to vital agricultural information, market data and professional advice through the integration of information and communication technologies. This has resulted in increased productivity, lowered post-harvest losses, and improved resource management. However, insufficient digital literacy, along with the limited number of digital service centers and facilities, insufficiently developed internet network and lack of awareness about the advantages of e-agriculture are responsible for the adaptation and broader acceptance of e-agriculture in this country (Sheikh and Berenyi, 2023; Goedde et al., 2021; Emeana et al., 2020). Digital literacy has a particularly important place in the acceptance of e-agriculture, as many authors have pointed out (Bejaković and Mrnjavac, 2020; Emeana et al., 2020; Pogorelskaia and Várallyai, 2020; Mushi et al., 2024b).

E-government users in rural areas in different countries are generally satisfied with the service. Significant criteria that determine the level of satisfaction are accessibility and interaction, as well as usefulness and ease of use (Hoque and Al Kabir, 2024; Bournaris, 2020). These characteristics of e-government are the most important features of electronic systems which lead to their acceptance by the population. The more citizens perceive the application as useful and easy to use, the more positively they will evaluate it and use it more frequently (Chen and Aklikokou, 2020; Manoharan et al., 2021; Eweoya et al., 2021; Zhang and Zhu, 2021).

However, some recent studies show that satisfaction with electronic services in agriculture is not universal. For example, a study conducted in the dairy sector in Spain showed that the use of e-government was associated with difficulties such as complex procedures, which led to calls to customer service, visits to regional

agricultural offices or hiring authorized individuals (Vázquez-López and Marey-Perez, 2021). In Switzerland, where e-government adoption is obligatory and legally prescribed, farmers perceive it as an administrative burden which does not positively contribute to productivity and farm income, particularly in the case of family farms (Reissig et al., 2022).

In Serbia, the new information system/electronic platform for agriculture, known as eAgrar, is under the competence of the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia. The platform started operating in the spring of 2023 with the aim of reforming the way of registering agricultural holdings and approving subsidies for farmers. The previously used Register of Agricultural Holdings, the related procedures and processes of incentive approval were established back in 2004, so many of the technological, software and procedural solutions were outdated. The old procedures were complicated, which led to delays in the approval and disbursement of incentives (Naled, 2023) and these were the reasons for introducing the new, modernized eAgrar platform in 2023. The eAgrar platform enables online registration of agricultural holdings, allows farmers to access and manage their farm data on a daily basis (including data changes and deletions), and allows online submission of registration applications and updating the applications for incentives in agriculture. It should be underlined that farmers are required to participate in the eAgrar system, meaning that the participation in this platform is mandatory for agricultural producers who want to participate in the subsidy system (national support measures for agriculture and rural development).

The main objective of the research in this paper is to examine the attitudes of agricultural producers in the beekeeping sector towards the new electronic agricultural service in Serbia – eAgrar. For the purposes of the research, the authors selected the population of beekeepers because beekeeping in Serbia has a long tradition and includes approximately 29,900 holdings managing about 1,103,000 bee colonies (SORS, 2019; SORS, 2023). In order to stimulate this production, the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia announces an annual competition for the allocation of subsidies per beehive. Given the new reality regarding the digitalization of agriculture, and the fact that the eAgrar platform is mandatory for beekeepers who want to participate in the subsidy system, it is necessary to understand how beekeepers perceive and accept the introduction of this system in agricultural production.

The study aims to show how beekeepers perceive and accept this digital platform, by analyzing their responses regarding its usefulness, usage challenges and adaptability to users' needs. Thus, by conducting an empirical study, the authors attempted to provide answers to the following initial hypotheses:

Ha0: The majority of beekeepers believe that the eAgrar application will bring benefits to their production.

Hb0: The majority of beekeepers find the eAgrar application easy to use and well-adapted to an average agricultural producer in Serbia.

The research was initiated by the authors' suspicion regarding the potential misunderstanding and rejection of different electronic services, digital tools and platforms by farmers in Serbia, bearing in mind their generally unfavorable age structure and low digital literacy. There was also a concern about accepting and understanding of the eAgrar platform in the beekeeping sector, since most beekeepers in Serbia are middle-aged or older people (between the ages of 41 and 65 years) and are mainly hobby beekeepers with apiaries of smaller production capacity (up to 90 production colonies).

The results of this study are expected to provide agricultural policymakers in Serbia with insights into different aspects of the practical application of the eAgrar platform. This would potentially help them to adjust the measures taken so far, improve the existing platform and create an optimal framework for the electronic service intended for farmers. In addition, the results will contribute to enriching the knowledge about the application of new technologies in agriculture, given that this is a new concept whose implementation is still in its early stages and there is an insufficient number of scientific studies on this topic.

Material and Methods

For the purposes of this research, data were collected using a survey questionnaire (employing Google forms), especially structured for the goals of this paper. The target group in the study was the population of beekeepers living in the area of the Republic of Serbia. The questionnaire was sent to them through the Union of Beekeeping Organizations of Serbia. The questionnaire was voluntary and anonymous, and the responses were to be provided from April to May 2023. Beekeepers received the questionnaire online, and valid responses were obtained from 459 of them. The sample characteristics are presented in the following table (Table 1).

In order to test the proposed hypotheses, the responses to the following four questions from the questionnaire containing a larger number of questions, were considered:

1. Do you think that you will benefit from eAgrar?
2. If you think that you will benefit, what benefits do you expect?
3. If you think that you will not benefit, what are the reasons for your opinion?
4. How difficult do you find using eAgrar?

The beekeepers also provided responses to the questions related to their place of residence, age, level of education and the number of bee colonies owned. These categorical variables were selected on the basis of the authors' experience, who

considered these to be the most significant parameters which can affect the respondents' opinion about the subject of the analysis. Gender was not considered as a variable since most beekeepers in Serbia are men, i.e. the percentage of women involved in beekeeping is almost negligible and is therefore unlikely to significantly affect the statistical analysis of the collected data.

Table 1. Sample characteristics.

Sample characteristics	Number, (%)
Region of living	459
Economically developed region: ➢ Belgrade region ➢ Vojvodina region	140 (30.5%)
Economically underdeveloped region: ➢ region of Šumadija and Western Serbia ➢ region of Southern and Eastern Serbia	319 (69.5%)
Age of beekeepers	457
➢ Up to 40	77 (16.8%)
➢ From 41 to 65	291 (63.4%)
➢ Over 65	89 (19.4%)
Education of beekeepers	459
➢ Primary school	18 (3.9%)
➢ Secondary school	224 (48.8%)
➢ College/faculty + Master's degree/PhD	217 (47.3%)
Number of beehives	459
➢ Up to 90	328 (71.5%)
➢ Between 91 and 150	77 (16.8%)
➢ Over 150	54 (11.8%)

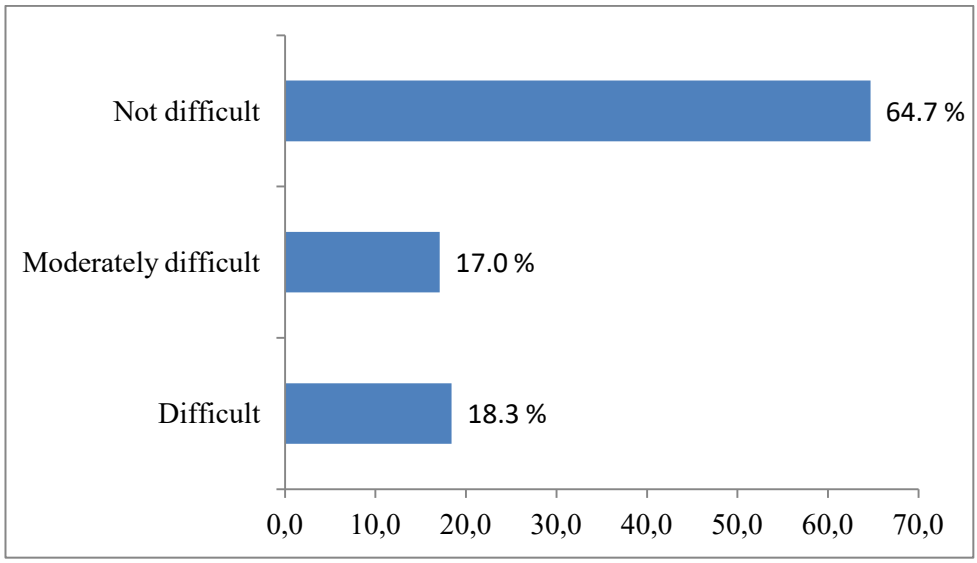
Source: Authors' presentation.

The statistical analysis of the data included the application of descriptive statistics and the chi-square test of independence, and it was conducted using the SPSS 21.0 software package (IBM, Chicago, USA), with the level of significance set at $p \leq 0.05$. The results are presented in both graphs and tables. In addition, the qualitative exploratory analysis tool Word Cloud was used for analyzing and presenting the responses to the question "If you think that you will benefit from it, what benefits do you expect?".

Results and Discussion

When answering the question "*How difficult do you find using eAgrar*?", the respondents could provide answers on the 5-step ordinal Likert scale, where: 1=not at all difficult, 2=a little difficult, 3=moderately difficult, 4=difficult, 5=very difficult. In order to facilitate the interpretation of the results, the responses were

divided into 3 categories: not difficult (responses 1 and 2 on the Likert scale), moderately difficult (response 3 on the Likert scale) and difficult (responses 4 and 5 on the Likert scale). A total of 459 respondents provided responses to this question. The data analysis indicates that the majority of the surveyed beekeepers, i.e. as many as 297 (64.7%) of them, thought that using this electronic platform was not difficult. Only 78 respondents (17.0%) found using eAgrar moderately difficult, while 84 (18.3%) found it difficult (Graph 1).



Graph 1. The difficulty of using the eAgrar platform, answer structure, 2023.
Source: Survey results. Authors' presentation.

The chi-square test of independence has been applied to find out whether there is a correlation between beekeepers' belief that they will benefit from eAgrar and their region of residence, age group, level of education and the number of bee colonies they own, i.e. whether there is a correlation between the challenges of using eAgrar and the selected variables. The results of the $\chi 2$ test showed that there was a statistically significant correlation only regarding the level of education and the challenges of using eAgrar, while the other variables had no significance. Therefore, based on the Pearson's chi-square values shown in Table 2, it can be concluded that there was a positive statistically significant correlation between the two studied variables ($\chi 2$ (4, 459)=16.551, p=0.002). The value of Cramer's V shows that the effect had a small size (Table 3).

Table 2. Value of the $\chi 2$ test for education and eAgrar usage challenges.

	Value	df	Asymptotic significance (2-sided)
Pearson's chi-square	16.551	4	.002
Likelihood ratio	15.321	4	.004
Linear-by-linear association	10.936	1	.001
N of valid cases	459		

Source: Output from SPSS 21.0 software package.

Table 3. Value of Cramer's V coefficient.

		Value	Approximate significance
Nominal by nominal	Phi	.190	.002
	Cramer's V	.134	.002
N of valid cases		459	

Source: Output from SPSS 21.0 software package.

By interpreting the values in the cross-tabulation table based on the adjusted residual values, it can be concluded that the percentage of respondents with primary and those with secondary level of education who found eAgrar difficult to use was higher than expected (if there were no correlations between the variables). On the other hand, the percentage of respondents with a higher level of education who described using eAgrar as difficult was lower than expected (Table 4).

Table 4. Cross-tabulation of education and the response to the question "How difficult do you find using eAgrar?".

			How difficult do you find using eAgrar?			Total
			Not difficult	Moderately difficult	Difficult	
Education	Primary school	Count	8	2	8	18
		%	44.4	11.1	44.4	100.0
		Adjusted residual	-1.8	-.7	**2.9**	
	Secondary school	Count	139	35	50	224
		%	62.1	15.6	22.3	100.0
		Adjusted residual	-1.2	-.8	**2.2**	
	College/faculty/ Master's degree/PhD	Count	150	41	26	217
		%	69.1	18.9	12.0	100.0
		Adjusted residual	1.9	1.0	**-3.3**	
Total		Count	297	78	84	459
		%	64.7	17.0	18.3	100.0

Source: Output from the SPSS 21.0 software package.

When it comes to the question "Do you think you will benefit from eAgrar?" the respondents could answer 1=Yes, I think I will benefit from it, 2=No, I do not think I will benefit from it. A total number of 459 respondents answered this question. The data analysis has revealed that the majority of those surveyed, i.e. as many as 372 individuals (81.0%), thought that they would benefit from this electronic platform, while only 87 respondents (19.0%) thought they would not benefit from it. There were various answers to the question "If you think that you will benefit from this, which benefits do you expect?". They were mainly associated with faster and easier procedures of registering and changing data about agricultural holdings, applying for subsidies, saving time and material resources, tracking the status of their holding, data accuracy, and particularly with their expectations regarding faster subsidy payments per beehive. Since their responses to this question were open-ended, the authors decided to take the advantages of the Word Cloud tool to analyze and visually represent the most prevalent words in the responses. The authors agreed to organize the beekeepers' responses according to the dominant words. This led to the conclusion that the most dominant word was FASTER, indicating that this is the most important characteristic of the electronic application. Apart from this word, the words EASIER and CHEAPER were also prevalent, while other words were used significantly less frequently (Diagram 1).

Diagram 1. Word Cloud for the question "If you think that you will benefit from it, what benefits do you expect?".

Legend: word FASTER – frequency 176; word EASIER – frequency 94; word CHEAPER – frequency 81; word EFFICIENT – frequency 30; word SIMPLER – frequency 26; word BETTER – frequency 7; word TRANSPARENT – frequency 7; word TIMELY – frequency 4; word ACCURATE – frequency 4; word AVAILABLE – frequency 3; word frequency less than 2 – EXPEDITIOUSLY, EFFECTIVELY, PROFESSIONAL, SAFER, USEFUL.

Only 47 beekeepers gave an answer to the question "If you think that you will not benefit from it, what are the reasons for your opinion?". After sorting their responses, it was concluded that the reasons for this opinion were mainly due to the complexity of the platform, which makes it difficult for users to work with it independently and urges them to ask for additional help. Other reasons included low digital literacy and technical problems with the platform. For younger beekeepers up to the age of 40, the greatest problem was the inadequate operation of the platform, i.e. the pages do not load quickly or cannot load at all, the system crashes, etc. The biggest issue for older beekeepers, particularly those older than 65, was the complexity of the system and their insufficient digital literacy. Beekeepers with a lower level of education thought that the system was complicated. On the other hand, those with a higher degree of education who believe they will not benefit from this platform stated that the greatest issues were the inadequate technical operation of the platform, as well as the complexity of use. It should be underlined that the eAgrar platform was launched in March 2023, and that the survey in this paper was conducted in April/May of the same year. Therefore, problems related to the technical functioning of the platform can be attributed to its early stages of operation, during which both farmers and platform developers were adapting to the new way of working.

The results of the conducted research show that both initial hypotheses are correct, i.e. the majority of beekeepers in Serbia thought that the new application in agriculture eAgrar was useful and easy to use. Namely, a vast majority of respondents in this research (as many as 81.0%) believed that they would benefit from the introduction of this platform, and 64.7% of them stated that they did not find it difficult to use. In general, the declared objectives of the creators of this electronic platform which primarily involve reducing paperwork and administration and accelerating different procedures (registering holdings, updating statuses and other agricultural data about agricultural holdings, processing subsidy applications and paying subsidies), have been achieved, since the majority of the respondents believed that these were the main advantages of the eAgrar platform. Therefore, the most important benefits were saving time and material resources (since time was no longer wasted while waiting in line, collecting documentation, etc.) The saved time can now be redirected towards working in the apiary, which can indirectly increase the productivity and profitability of production. This is in accordance with the studies of other authors conducted in rural areas of other countries, where inhabitants believe that e-government provides better work performance, makes them more productive and consequently increases their income (Kamarudin et al., 2021; Panganiban, 2019).

If usefulness and ease of use of the electronic platform are taken as the criteria for assessing the satisfaction with e-government in the sector of agriculture, it can be concluded that, on the whole, eAgrar users were satisfied with the service. This

aligns with the findings of the authors from other countries (Hoque and Al Kabir, 2024; Bournaris, 2020). However, it must be underlined that the use of eAgrar in Serbia is mandatory for all agricultural producers who want to be part of the subsidy system. The authors have the impression that the subsidies are an important motivator for beekeepers to engage in mastering this application. The usefulness of the application in this sense (easier and faster access to subsidies) is thus an extremely significant factor in mastering the use of the application, which is consistent with the research of Zhang and Zhu (2021).

Approximately one fifth of respondents thought that they would have no benefits from eAgrar. They stated that the main reasons for this were the inadequate technical operation of the application, the excessive complexity of the platform preventing beekeepers from using it independently, and the insufficient digital literacy of the users (beekeepers). For the dissatisfied users, the complexity of the platform and insufficient digital literacy represented the main reasons for requiring assistance from acquaintances or agricultural extension services. This can be correlated with a study conducted in some countries, where the use of e-government is connected with a greater engagement of producers in the search for agricultural extension officers and other professional services to help them overcome complex procedures, and they consider it an administrative burden (Vázquez-López and Marey-Perez, 2021; Sheikh and Berenyi, 2023; Reissig et al., 2022).

Conclusion

Beekeeping is a significant sector of agricultural production, primarily due to the importance of pollination in the ecosystem secured by bees, but also due to the economic benefits from selling honey and other bee products. In the area of Serbia, there are more than one million honey-bearing bee colonies, and almost 30,000 agricultural holdings involved in this production.

The digitalization of agriculture, which includes the implementation of e-government in the sector of agriculture (eAgrar platform), has also encompassed the beekeeping sector. This digital platform started operating in 2023 and is mandatory for all registered agricultural holdings that want to participate in the system of national subsidies.

The authors' research has shown that the majority of the surveyed beekeepers consider the eAgrar platform to be useful and that digitalization will make all administrative procedures in cooperation with the Directorate for Agrarian Payments of the Republic of Serbia faster, easier and cheaper. This consequently leads to saving time, which can be redirected to working in apiaries and improving the productivity of beekeeping production. In addition, the research has found that the majority of the surveyed respondents find the

platform easy to use, which indicates that it is well adjusted to end-users' needs. Also, the research has shown that education is a significant predictor of success in the implementation of the electronic platform, as education was the only categorical variable which showed significance in the evaluation of the challenges in using e-government in agriculture.

The study results provide agricultural policy makers with insights into the practical application of the new digital platform, thus creating the possibility for continuously developing and optimally adapting the platform to the needs of farmers. Beekeepers need to continuously acquire and develop their IT knowledge and skills in order to work efficiently and independently on the eAgrar digital platform. Users need time to become competent when using this platform, and developing digital knowledge and skills is of key importance for adapting to the new digital age.

Acknowledgments

Paper is a part of research financed by the MSTDI RS, agreed in decision no. 451-03-136/2025-03/200009 from 4.2.2025.

References

Alassaf, P., & Szalay, G.Z. (2020). Engaging agriculture in e-government, E-agriculture potentials and its contribution in economy. *Journal of Agricultural Informatics*, *11* (2), 22-33. doi:10.17700/jai.2020.11.2.576

Bejaković, P., & Mrnjavac, Ž. (2020). The importance of digital literacy on the labour market. *Employee Relations: The International Journal*, *42* (4), 921-932. doi:10.1108/ER-07-2019-0274

Bournaris, T. (2020). Evaluation of e-government web portals: The case of agricultural e-government services in Greece. *Agronomy*, *10* (7), 932. doi:10.3390/agronomy10070932

Chen, L., & Aklikokou, A.K. (2020). Determinants of E-government adoption: testing the mediating effects of perceived usefulness and perceived ease of use. *International Journal of Public Administration*, *43* (10), 850-865. doi:10.1080/01900692.2019.1660989

Emeana, E.M., Trenchard, L., & Dehnen-Schmutz, K. (2020). The revolution of mobile phone-enabled services for agricultural development (m-Agri services) in Africa: The challenges for sustainability. *Sustainability*, *12* (2), 485. doi:10.3390/su12020485

European Commission (2017). EU Action for Smart Villages. Retrieved August 22, 2024, from: https://agriculture.ec.europa.eu/system/files/2019-11/rur-dev-small-villages_en_0.pdf

Eweoya, I., Okuboyejo, S.R., Odetunmibi, O.A., & Odusote, B.O. (2021). An empirical investigation of acceptance, adoption and the use of E-agriculture in Nigeria. *Heliyon*, *7* (7), e07588. doi:10.1016/j.heliyon.2021.e07588

Goedde, L., McCullough, R., Ooko-Ombaka, A., & Pais, G. (2021). *How digital tools can help transform African agri-food systems.* McKinsey & Company, Retrived August 26, 2024, from: https://afchub.org/documents/1611833593How-digital-tools-can-help-transform-African-agri-food-systems-v2.pdf

Hoque, S.M.S., & Al Kabir, M.A. (2024). Assessing ICT and e-government service through UDC in Bangladesh: rural dwellers' economic benefits. *Electronic Government*, *20* (2), 161-174, doi:10.1504/EG.2023.10046454

Kamarudin, S., Omar, S.Z., Zaremohzzabieh, Z., Bolong, J., & Osman, M.N. (2021). Factors predicting the adoption of e-government services in telecenters in rural areas: The mediating role of trust. *Asia-Pacific Social Science Review*, *21* (1), 20-38. doi:10.59588/2350-8329.1347

Manoharan, A.P., Ingrams, A., Kang, D., & Zhao, H. (2021). Globalization and worldwide best practices in E-Government. *International Journal of Public Administration*, *44* (6), 465-476. doi:10.1080/01900692.2020.1729182

Mushi, G.E., Burgi, P.Y., & Serugendo, G.D.M. (2024a). Designing a farmers digital information system for sustainable agriculture: The perspective of Tanzanian agricultural stakeholders. *The Electronic Journal of Information Systems in Developing Countries*, Early View, e12344. doi: 10.1002/isd2.12344

Mushi, G.E., Burgi, P.Y., & Di Marzo, Serugendo, G. (2024b). State of Agricultural E-Government Services to Farmers in Tanzania: Toward the Participatory Design of a Farmers Digital Information System (FDIS). *Agriculture*, *14* (3), 475. doi: 10.3390/agriculture14030475

Naled (2023). Siva knjiga, Preporuke za uklanjanje administrativnih prepreka poslovanju u Srbiji. Retrived August 26, 2024 from: https://naled.rs/htdocs/Files/12105/Siva-knjiga-15.pdf

Panganiban, G.G.F. (2019). E-governance in agriculture: digital tools enabling Filipino farmers. *Journal of Asian Public Policy*, *12* (1), 51-70. doi:10.1080/17516234.2018.1499479

Pogorelskaia, I., & Várallyai, L. (2020). Agriculture 4.0 and the role of education. *Journal of Agricultural Informatics*, *11* (1), 45-51. doi:10.17700/jai.2020.11.1.571

Reissig, L., Stoinescu, A., & Mack, G. (2022). Why farmers perceive the use of e-government services as an administrative burden: A conceptual framework on influencing factors. *Journal of Rural Studies*, *89*, 387-396. doi:10.1016/j.jrurstud.2022.01.002

Safiullin, N.A., Kurakova, C.M., Valeeva, G.A., Gainutdinov, I.G., & Kudryavtseva, S.S. (2021). Development of Electronic Public Services in Agriculture. In BIO Web of Conferences from the International Scientific-Practical Conference "*Agriculture and Food Security: Technology, Innovation, Markets, Human Resources*" (Vol. 37, p. 00159), Kazan, Russia. doi:10.1051/bioconf/20213700159

Sheikh, M.S., & Berenyi, L. (2023). E-Governance in Agriculture: A Framework on Digital Technology Adaptation by Smallholder Farmers. In CEEeGov '23: *Proceedings of the Central and Eastern European eDem and eGov Days* (pp.78-83), Budapest, Hungary. http://real.mtak.hu/174489/1/3603304.3603341.pdf

SORS (2019). Struktura poljoprivrednih gazdinstava. *Statistical Office of the Republic of Serbia*. Retrieved August 22, 2024, from: https://publikacije.stat.gov.rs/G2019/Pdf/G201922002.pdf

SORS (2023). Online database. *Statistical Office of the Republic of Serbia*. Retrieved August 22, 2024, from: https://data.stat.gov.rs/?languageCode=sr-Latn

Vázquez-López, A., & Marey-Perez, M. (2021). Factors Affecting e-Government Adoption by Dairy Farmers: A Case Study in the North-West of Spain. *Future Internet*, *13* (8), 206. doi:10.3390/fi13080206

Zhang, B., & Zhu, Y. (2021). Comparing attitudes towards adoption of e-government between urban users and rural users: an empirical study in Chongqing municipality, China. *Behaviour & Information Technology*, *40* (11), 1154-1168. doi:10.1080/0144929X.2020.1743361

Received: October 28, 2024
Accepted: May 16, 2025

PLATFORMA E-AGRAR U POLJOPRIVREDI SRBIJE: OCENA KORISTI I TEŽINE KORIŠĆENJA SA STANOVIŠTA PČELARA

Bojana S. Bekić Šarić*, Vesna T. Paraušić i Lana M. Nastić

Institut za ekonomiku poljoprivrede, Volgina 15, Beograd, Srbija

R e z i m e

Cilj istraživanja usmeren je na razumevanje stavova pčelara u pogledu korisnosti i težine korišćenja novog vladinog elektronskog servisa u poljoprivredi – eAgrar. Ovu platformu pokrenulo je Ministarstvo poljoprivrede, šumarstva i vodoprivrede Republike Srbije 2023. godine, a učešće na njoj je obavezno za sve poljoprivredne proizvođače koji žele da budu u nacionalnom sistemu subvencija. Podaci za potrebe istraživanja u okviru ovog rada prikupljene su u periodu mart–april 2023. godine, putem struktuiranog onlajn anketnog upitnika (*Google forms*). Broj ispitanika bio je reprezentativan (459), a slučajno uzorkovanje garantovalo je anonimnost ispitanika i obezbedilo je kredibilitet istraživanja. Obrada prikupljenih podataka podrazumevala je primenu deskriptivne statistike, $\chi 2$ testa nezavisnosti i alata *Word Cloud*. Rezultati istraživanja su pokazali da većina ispitanika (81,0%) smatra da će imati koristi od uvođenja ove platforme, jer će sve administrativne procedure u poslovanju postati brže, lakše i jeftinije. Za većinu pčelara (64,7%) platforma je laka za korišćenje, dok se oko trećina njih ne snalazi najbolje, te je u značajnoj meri oslonjena na podršku poljoprivrednih savetodavaca. Rezultati $\chi 2$ testa nezavisnosti ujedno su pokazali da postoji statistički značajna veza između stepena obrazovanja ispitanika i teškoća u radu na platformi eAgrar. Očekuje se da će rezultati ove studije kreatorima poljoprivredne politike u Srbiji pružiti uvid u različite aspekte praktične primene platforme eAgrar, kao i doprineti obogaćivanju naučnih saznanja o primeni novih tehnologija u poljoprivredi.

Ključne reči: e-uprava, poljoprivreda, anketno istraživanje, Republika Srbija.

Primljeno: 28. oktobra 2024.
Odobreno: 16. maja 2025.

*Autor za kontakt: e-mail: bojana_b@iep.bg.ac.rs