Univerzitet u Beogradu
Poljoprivredni fakultet
Institut za poljoprivrednu tehniku
Naučni časopis
**POLJOPRIVREDNA TEHNIKA**
Godina XLIX
Broj 4, 2024.
Strane: 33 – 38

University of Belgrade
Faculty of Agriculture
Institute of Agricultural Engineering
Scientific Journal
**AGRICULTURAL ENGINEERING**
Year XLIX
No. 4, 2024.
pp. 33 – 38

*Review paper*
*Pregledni rad*
**DOI: 10.5937/POLJTEH2404033B**

# MANAGEMENT OF NON-STANDARD AGRICULTURAL EQUIPMENT BASED ON THE ASSESSMENT OF FARM OWNERS AND MANAGEMENT OF HEALTHCARE ORGANIZATIONS USED IN THE TREATMENT OF PATIENTS

**Ognjen Bakmaz[1]; Jadranka Đuranović-Miličić[2]; Dugonjić Dijana[3]; Miloš Dragosavac[4]; Aleksandar Dejanović[5]; Željko Grubliešić[6]; Slobodan Popović [*7]**

[1]*College of Service Business, Cara Lazara bb, East Sarajevo-Sokolac, R.Bosnia and Herzegovina,*
[2]*College of Vocational Studies for the Education of Teachers and Trainers Subotica, Republic of Serbia,*
[3]*JZNU Dom Zdravlja Dr. Mustafa Šehović, Tuzla, Bosnia and Herzegovina,*
[4,5]*High School of Modern Business, Belgrade, Republic of Serbia,*
[6]*PIM University, Banja Luka, R. Bosnia and Herzegovina,*
[7]*Public Utility Company Gradsko Zelenilo Novi Sad, Novi Sad, Republic of Serbia*

***Abstract:*** In this study, the authors showed the existence of a strong influence between the possible use of non-standard agricultural equipment on the example of the construction of Api chambers on agricultural farms, which makes it possible to increase the efficiency of its use by forming cooperative relations between farms and health institutions that also have an economic interest in using such equipment, in treatment patients.

In addition, we found that based on total income and expenses, the formation of total profit can be predicted because the application of such a business model is statistically significant (F=183.600, p<0.0005), that is, income and expenses have a significant impact on the prediction of profit in this type of business agricultural farms.

The same applies to such business operations of health institutions, because the obtained model was evaluated with because the obtained model is statistically significant (F=327.121, p<0.0005) in the way of cooperative business with non-standard agricultural equipment (Api chambers) that can be use in the treatment of patients.

*Corresponding Author. E-mail: slobodan.popovic49@gmail.com
**ORCID: 0000-0002-6321-8141**

***Key words**: Agricultural economy, business efficiency, Api chamber, treatment of patients.*

## INTRODUCTION

Management and business decision-making was the focus of numerous researches, which is of great importance for business in the field of agriculture [1-6], but also for business in other sectors of the economy, such as the public sector and healthcare.

The decision-making of the business owner is important, and one of the basic principles is the application of valid and economic business, which implies cooperation between different sectors [7-11].

Such business requires finding a management model that connects, for example, agriculture with other business sectors [12-16].

## MATERIALS AND METHODS

To prepare this study, the authors surveyed 180 participants, namely 72 owners of agricultural farms in the Republic of Serbia, i.e. 108 managers of health institutions from the territory of the Republic of Serbia. This was done in the period from 01.03. until 31.03. in 2024.

The observation was carried out in such a way that non-standard agricultural equipment was analyzed in terms of additional investments within agricultural holdings. The observation was made regarding the possibilities of individual use of Api chambers on the agricultural farm, but also within the framework of cooperation with health institutions that would bring patients to use this equipment with the aim of improving the health condition of patients.

The analysis covered three categories: income, expenditure and realized profit. As a final analysis, a forecast of the future profit within agricultural holdings was made, that is, the profit that health organizations achieve by using it in the treatment of patients.

After that, the authors performed statistical processing using the software IBM SPSS (Statistical Package of Social Science) version 25, with the application of the t test, and a regression analysis was applied to predict the total profit of agricultural farms and health institutions on this basis.

A level of 0.05 was used for the threshold value of significance.

## RESEARCH RESULTS AND DISCUSSIONS

The goal of the research was to determine the existence of differences in the assessment of agricultural farm owners and managers of health organizations regarding the existence of total income, expenses and profits in the use of two forms of business based on the use of non-standard agricultural equipment, i.e. based on investment in Api chambers. All this was observed using the t-test.

The obtained results are given in table 1.

Table 1. Differences in the assessment of farm owners and managers of health organizations for total income, expenses and profit

| | Agricultural farms | Health organization | t | p |
|---|---|---|---|---|
| | Middle value | | | |
| Income | 19.91 ± 1.02 | 20.51 ± 1.32 | -3.301 | 0.001* |
| Cost | 13.11 ± 1.39 | 12.32 ± 1.49 | 3.410 | 0.001* |
| Profit | 6.59 ± 1.19 | 8.11 ± 1.15 | -8.269 | <0.0005* |

Note: Statistical significance at the level of 0.05.

Based on the presented results (Table 1), it can be seen that there is a significant difference in terms of the formation of total revenues, total costs and generated profits, i.e. where managers from health organizations gain more trust, i.e. with higher ratings they valued the generated total revenues and the total profit that they can achieve in cooperation with agricultural holdings regarding the use of non-standard agricultural equipment, that is, Api chambers for the treatment of patients. At the same time, they achieve a lower rating for total costs compared to the owners of agricultural farms, which points to the economic justification of such cooperation.

In the following, multiple linear regression was applied to examine whether, based on total income and expenses, the formation of the total profit for the operation of agricultural farms can be predicted.

Total profit can be predicted on the basis of income and expenses since the model is statistically significant ($F=183.600$, $p<0.0005$).

Based on the results shown in Table 2, it can be seen that income and cost have a significant impact on the prediction of profits for agricultural holdings.

Table 2. Prediction of the total profit of agricultural holdings

| | Beta | t | p |
|---|---|---|---|
| A constant | - | 2.183 | 0.032* |
| Income | 0.768 | 12.770 | <0.0005* |
| Cost | -1.148 | -19.101 | <0.0005* |

Note: Statistical significance at the level of 0.05.

Total profit can be predicted on the basis of income and expenses since the model is statistically significant ($F=327.121$, $p<0.0005$).

Table 3. Predicting total profit in healthcare organizations

| | Beta | t | p |
|---|---|---|---|
| A constant | - | 5.120 | <0.0005* |
| Income | 0.861 | 16.117 | <0.0005* |
| Cost | -1.279 | -21.201 | <0.0005* |

Note: Statistical significance at the level of 0.05.

## CONCLUSION

The general conclusion would be that there is a strong connection between the use of non-standard agricultural equipment and raising the efficiency of its use on agricultural farms by forming cooperative relations between farms and health institutions that use such equipment, for example Api chambers

The next conclusion would be that on the basis of total income and expenses, the formation of total profit for the mentioned business can be predicted, because the determination coefficient of 0.841 was obtained, the model is statistically significant ($F=183.600$, $p<0.0005$) and that income and expenses have a significant impact on the prediction of profits in such operations of agricultural farms.

The results are even more impressive in the case of health institutions because the obtained model was evaluated with 99.98% with the total variance formed, the model of which is statistically significant ($F=327.121$, $p<0.0005$) in such a business with non-standard agricultural equipment (Api chambers) in the treatment of patients.

## CONFLICT OF INTEREST

None is declared.

## REFERENCES

[1] Arnautović, I., Davidov, T., Nastić, S., Popović, S. 2022. Značaj donošenja racionalne poslovne odluke top menadžmenta u poljoprivrednim preduzećima u Republici Srbiji, *Poljoprivredna tehnika*, Vol. 47(3), pp.1-8.

[2] Popović, S. 2016. Značaj interne revizije u fer vrednovanju javnih preduzeća Republike Srbije, *Revizor*, Vol. 74, pp.71-81.

[3] Popović S, Jovin S, Đuranović D, Popović V, Filipović V, Munitlak-Ivanović O, Grublješić Ž. & Mijić R. 2017. The Importance of Planting Pot Marigolds (Calendula officinalis L.) in degraded public spaces from the agro-ecological and economic perspective. *Contemporary Agriculture*, Vol. 66(1-2), pp.27-31.

[4] Arnautović, I., Davidov, T., Nastić, S., Popović, S. 2022. Značaj poslovnog odlučivanja top menadžmenta u poljoprivrednom preduzeću koja koriste praktičnu primenu novih pristupa softverskih rešenja it sektora u Republici Srbiji, *Poljoprivredna tehnika*, pp. 51-57.

[5] Popović, S., Laban, B., Vukasović, D., Ivić, M., Nastić, S. & Popović, V. 2018. Internal and external audit as a factor in improving the management of the Agricultural enterprise, *Poljoprivredna tehnika*, Vol. 43(4), pp. 8–12.

[6] Rakaščan, N., Popović, V., Dražić, G, Ikanović, J. & Popović, S. 2019. Circular economy in function of obtaining the biogass, 25th–27th September 2019, Novi Sad, Serbia, pp.320-329.

[7] Radović, M., Vitomir, J., Laban, B., Jovin, S., Nastić, S., Popović, V. & Popović S. 2019. Management of joint stock companies and farms by using fair value of agricultural equipment in financial statements on the example of IMT 533 Tractor, *Economics of Agriculture*, Vol. 1, pp.35-50.

[8] Tomas-Miskin S., Vitomir, J., Popović, S. & Vitomir, G. 2022. Decision-making of Top Management and Internal Audit on the Issue of Archiving Documentation in Companies Founded by Local Government Units in the Republic of Serbia, *Lex Localis – Journal of Local Self-Government,* Vol. 20(4), pp. 889 – 995.
[9] Radović, M., Vitomir, J., Popović, S. 2021. Kretanje dokumentacije u sklopu revizijskog izveštavanja top menadžmenta poljoprivrednog preduzeća, *Poljoprivredna tehnika,* Vol. 46(1), pp. 47-53. DOI: 10.5937/POLJTEH2101047R.
[10] Radović, M., Vitomir, J., Popović, S. & Stojanović, A. 2023. The Importance of Establishing Financial Valuation of Fixed Assets in Public Companies whose Founders Are Local Self-Government Units in the Republic of Serbia, *Enginering Economics*, Vol. 34(3), pp. 246-255.
[11] Radović, M., Vitomir, J., Popović, S. & Stojanović, A. 2023. The Importance of Establishing Financial Valuation of Fixed Assets in Public Companies whose Founders Are Local Self-Government Units in the Republic of Serbia, *Enginering Economics*, Vol. 34(3), pp. 246-255.
[9] Radović, M., Vitomir, J. & Popović, S. 2021. Impact of internal control in enterprises founded by local self government units: the case of Republic of Serbia, *Inzinerine Ekonomika-Engineering Economics,* Vol. 32(1), pp. 82–90.
[10] Bakmaz, O., Bjelica, B. & Vitomir, J. 2023. Application of software solutions in companies that strive to achieve increased financial stability in their regular business, *Temel-IJ*, 7:1, 13 – 20.
[11] Popović, S. (2018). Modeling a strategic top management in the importance of the management of the finance companies established for the establishment of fer value, *Poljoprivredna tehnika*, Godina Vol. 43(2), pp. 11–16.
[12] Popović, S., Vitomir, J., Tomaš-Miskin, S., Davidov, T., Nastić., S., Popović, V., Popović, D., Vitomir, G. 2021. The importance of a realistically determined amount of tax on property rights relating to the ownership of agricultural land in the Republic of Serbia adopted by tax authorities of local selfgovernment units, *Ekonomika poljoprivrede*, Vol. 4, pp. 1029-1042.
[13] Jokić, M., Popović, D., Popović, S., 2020. Značaj pripreme revizijskog izveštaja za top menadžment poljoprivrednog preduzeća, Poljoprivredna tehnika, Vol. 2, pp. 21-27.
[14] Radović, M., Vitomir, J., Laban, B., Jovin, S., Nastić, S., Popović, V. & Popović S. 2019. *Management of joint-stock companies and farms by using fair value of agricultural equipment in financial statements on the example of IMT 533 tractor*, Economics of Agriculture, Vol. 1. pp. 35-50.
[15] Vitomir, J., Radović, M. & Popović, S. 2021. The Effect of Public Finance Control on the Improvement of Work of Internal Auditors in Enterprises Founded by the Local Self-government Units on the Example of the Republic of Serbia, *Lex localis - Journal of Local Self-Government,* Vol. 19(2).
[16] Jokić, M., Laban, B., Arnautović, I., Popović, D. & Popović, S. 2020. The importance of preparing an internal audit report in reporting to top management of a company that makes key management decisions in its work, *Annals*, Vol. 2, pp. 1-8.

## UPRAVLJANJE NE STANDARDNOM POLJOPRIVREDNOM OPREMOM KOJA SE KORISTI U LEČENJU PACIJENATA NA OSNOVU VREDNOVANJA VLASNIKA POLJOPRIVREDNIH GAZDINSTAVA I RUKOVODSTVA ZDRAVSTVENIH ORGANIZACIJA

**Ognjen Bakmaz[1], Jadranka Đuranović-Miličić[2], Dugonjić, Dijana[3], Miloš Dragosavac[4], Aleksandar Dejanović[5], Željko Grubliješić[6], Slobodan Popović[7]**

[1] *Visoka škola za uslužni biznis, Cara Lazara bb, Istočno Sarajevo-Sokolac, R.Bosna i Hercegovina,*
[2] *Visoka škola strukovnih studija za obrazovanje vaspitača i trenera Subotica, R.Srbija,*
[3] *JZNU Dom Zdravlja Dr Mustafa Šehović, Tuzla, R. Bosna i Hercegovina,*
[4,5] *Visoka škola modernog biznisa, Terazije 24, Beograd, R.Srbija,*
[6] *Univerzitet PIM, Banja Luka, R. Bosna i Hercegovina,*
[7*] *Javno komunalno preduzeće Gradsko Zelenilo Novi Sad, Novi Sad, Srbija*

***Abstrakt:*** U ovoj studiji autori su pokazali da postoji snažan uticaj između moguće upotrebe ne standardne poljoprivredne opreme na primeru izgradnje Api komora na poljoprivrednim gazdinstvima, što omogućava povećanje efikasnosti njenog korišćenja formiranjem kooperativnih odnosa između gazdinstava i zdravstvenih ustanova, koje takođe imaju ekonomske interese da koriste takvu opremu u lečenju pacijenata.

Pored toga, konstatovano je da se na osnovu ukupnih prihoda i rashoda može predvideti formiranje ukupne dobiti, jer je primena ovakvom poslovnog modela statistički značajan ($F=183.600$, $p<0.0005$), odnosno prihodi i rashodi imaju značajan uticaj na predviđanje dobiti u ovoj vrsti poslovanja poljoprivrednih gazdinstava.

Isto se odnosi i za takvo poslovanje zdravstvenih ustanova, jer je dobijeni model statističkih značajan ($F=327{,}121$, $p<0{,}0005$) u slučaju kooperativnog poslovanja sa ne standardnom poljoprivrednom opremom (Api komore) koje mogu da se koriste u lečenju pacijenata.

***Ključne reči:*** *Poljoprivredno gazdinstvo, efikasnost poslovanja, Api komora, lečenje pacijenata.*

**Prijavljen: 31.05.2024.**
*Submitted*:
**Ispravljen: 30.11.2024.**
*Revised*:
**Prihvaćen: 05.12.2024.**
*Accepted*: