THE EFFECTS OF FINANCIAL INNOVATION IN THE AGRIBUSINESS LANDSCAPE: ASSESSING THE IMPACT OF BEHAVIORAL FACTORS ON THE ACCEPTABILITY OF E-FISCALIZATION

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Abstract

Through digitization and transparency of tax monitoring and reporting, e–fiscalization has gained global traction for its potential for innovation and efficiency. The research focuses on the specific dynamics of fiscal innovation in the agribusiness landscape in Albania, aiming to identify the behavioral typology of agribusiness operators and its impact on acceptance or resistance to e–fiscalization initiatives and relying on a holistic review of the research literature and the qualitative-quantitative method, through the analysis and findings from the database obtained via the survey of agri–operators. The study shows their behavioral patterns according to their perceptions of e-fiscalization. Perceived benefits, ease of use, attitude towards the e-fiscal system, and compliance are some of the main factors examined. The findings provide a useful road map for policymakers, tax authorities, entrepreneurs, and researchers in the field, guiding the development of new strategies that match the behavioral patterns of agricultural operators and encouraging good institutional practices that successfully integrate innovations into the agrarian landscape in similar cases.

*Key words***:** *e–fiscalization, behavior, acceptability, agribusiness operators*

INTRODUCTION

In the era of the Fourth Industrial Revolution and the Internet of Things (IoT), rapid innovation has far-reaching economic, technological, instrumental, and socio-psychological implications. Its presence in the financial sectors and the perceived efficiency of public policy effects constitute an important and primary topic.

Taxes are used as a financial tool to enrich the state and local budgets. The legal regulations established by the state regarding taxes have a beneficial effect on economic activity. Taxes are of various types (direct and indirect taxes, contribution to social insurance, profit tax, income tax, taxes on properties (land, house, cars, car park, etc. [17, 15]. Tax collection has an important role in diminishing the budget deficit [11] or, in other words, increasing the budget revenues and assuring the legality of economic transactions and payments [4].

Among the challenging dynamics of integration and sectoral (or contextual) consequences specific to agriculture and the food chain, Albania has recently implemented innovative practices in several key areas, such as the economy, administrative services, and banking. Perhaps the most debated has been the modernization of fiscal policy through e-fiscalization [4]. While the effort to develop a transparent and efficient fiscal environment has progressed alongside reform development, technological costs and challenges have been accompanied by consequences and uncertainties impacting entrepreneurs' perceptions and behavior, particularly agricultural operators.

The behavior of agro-operators or individuals within the agribusiness landscape can play a decisive role in determining the success of e–

fiscalization as a public policy, also serving as a driver (or not) for future innovations. Moreover, agri–operators have faced interpretative–regulatory challenges for e–fiscalization requirements from tax authorities, including electronic invoicing, data retention, and reporting guidelines. Their readiness for adaptation and integration of the necessary technology has included the implementation of electronic systems at points of sale, invoicing software, and other digital tools to facilitate electronic transaction registration. Agri–operators now accurately perform data in electronic systems, reflecting the nature of transactions, ensuring their financial integrity, and contributing to preventing potential errors or mismatches.

Training programs and awareness campaigns have been essential in educating them about the benefits and new requirements of e-fiscalization, helping to minimize resistance to changes (and the status quo as a culture mainly, in agriculture), and ensuring a better understanding of technology use. Within the agribusiness landscape, trust in the security of electronic transactions and financial data has generally increased, providing previously unknown capabilities of agri-operators regarding cybersecurity and protection against unauthorized access to data and security risks. Furthermore, by avoiding outdated (or abusive, corrupt, etc.) practices of tax authorities or subjectivism (often justified) in the agricultural sector through new audit-inspection practices, cooperation has deepened, improving the business environment and trust.

However, agri–operators often expressed concerns about the costs of implementing the e-fiscalization system and sometimes uncertainties about understanding the long–term benefits of system modernization and reducing the possibilities for tax evasion. Moreover, the acceptability or recognition process of the value of these investments (economic, technological, social, epistemological, etc.) involves a shift from the traditional (or evasive) document-based processes to digitalization, thus an evolutionary scale not so simple. Their behavior toward openness and changes stemming from innovations impact technological acceptability, progress in the knowledge society, and the speed of transition in public services.

Literature review

To understand the e–fiscalization signs in Albania, it is important to examine the literature in the field of fiscal systems and their modernization progress. The Technology Acceptance Model (TAM) posits that ease of use and perceived usefulness are key determinants of technology acceptance [5]. In the context of agriculture, the importance of farmers' perceptions of the simplicity of technology and practical value in influencing their adoption decisions [22] [10]. Technological literacy plays a crucial role in technology acceptance [13]. Farmers with higher levels of digital literacy are more likely to embrace and adopt new agricultural technologies [23]. Perceived risks has been associated with technology adoption [3] [6]. Farmers' concerns about financial investments, system reliability, and potential disruptions to established practices can act as barriers to technology acceptance.

Social networks significantly influence technology acceptance [19]. The opinions of peers, family members, and community influencers play a vital role in shaping farmers' decisions to adopt new technologies [14] [20]. Government support is a critical factor influencing technology acceptance [13] [7] [16]. Agricultural policies and subsidies can positively impact farmers' willingness to adopt new technologies. Effective training programs and technology demonstrations facilitate technology acceptance [13]. The importance of practical experiences and educational resources in building farmers' confidence and encouraging technology adoption [18] [13].

Perceived ease of use is a key factor in technology adoption [5]. According to the Technology Acceptance Model (TAM), individuals are more likely to use technology if they perceive it as easy to use. This perspective is echoed on the extended TAM [22], which emphasizes the importance of perceived ease of use in shaping user behavior. Perceived usefulness or the belief

that technology enhances job performance is closely related to user behavior [5]. The Theory of Reasoned Action posits that individuals are more likely to use new technology if they perceive it as useful for achieving their goals [8].

Psychological factors play a significant role in technology adoption behavior. Social Cognitive Theory suggests that individuals learn by observing others, implying that social influences can shape technology-use behavior [2]. The role of perceived attributes of innovation, including compatibility and relative advantage, influences individual behaviors toward technology adoption [13]. Individual differences such as personality traits and demographic factors influence technology adoption behavior. Factors such as openness to experience, computer self-efficacy, and age can impact individuals' attitudes and behaviors in adopting new technologies [21].

Contextual factors such as organizational and environmental influences are crucial in shaping technology behavior. The role of emotions in technology use behavior emphasizes how emotional responses to technology can influence usage decisions [1], [12]. User experience (UX) is a major determinant of technology use behavior. Positive experiences, ease of interaction, and

overall satisfaction significantly contribute to individuals' continued technology use [9] [12].

Considering the gap in the literature, the study aims to examine the factors that determine the behavior of agri-operators towards fiscal innovations by analyzing their impact on the acceptability of the e-fiscalization reform in Albania.

MATERIALS AND METHODS

To cover the analysis, we used an advanced methodology employing interviews with representatives of the agribusiness sector.

The survey included 121 respondents from various regions in Albania, with the highest participation from Shkodra, Berat, and Tirana. Data was collected from March to July 2024 using Google Forms, following initial improvements after three case studies. The communication involved emails and reminder messages to legal representatives of agribusinesses. The mixed qualitative-quantitative method enabled a holistic approach to the impact of behavioral factors on the acceptability of e-fiscalization by agro-operators.

The variables explaining the behaviour of agri–operators towards the implementation of e–fiscalization are summarized in Table 1.

Table 1. Variables indicating the behavior of agricultural operators

Independent Variable			
Concept	**Variables**	**Symbol**	**Measurement by Likert scale**
Behavior of agri–operators	Awareness in Reporting	Behav_1	1 (Strongly Disagree) 2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly Agree)
	Higher payment readiness	Behav_2	
	Mandatory employment of an accountant	Behav_3	
	Price increase	Behav_4	

Source: Author's processing.

RESULTS AND DISCUSSIONS

The study analyzes the main characteristics of the sample, which includes 121 valid answers. Geographically, approximately 30.58% of respondents are agribusiness people in Shkodra, followed by Berat (19.01%) and

Tirana (13.22%), with the remaining distributed across other cities in Albania.

The gender distribution is uneven, with 83.47% male and 16.53% female respondents. Regarding roles, 48 respondents were company owners, while 73 held various operational positions.

The average age of respondents is 44 years, with a standard deviation of 9.43 years.

The average work experience is 11 years, with a standard deviation of 7.09 years. Educational levels indicate that approximately 43% have higher education, 52% have secondary education, and only 5% have primary education.

The types of business activities include processors (11.57%), domestic and export traders (0.83%), collection points (4.96%), and agricultural producers (5.79%). Additionally, 50.41% are engaged in a combination of these activities.

The classification of economic units shows that 9.1% are large units, 10.7% are medium-sized, 14.9% are small, and 65.3% are micro–unit.

The sector distribution includes dairy (34.7%), meat (11.6%), and wine (6.6%), with the remaining in other sectors.

According to the survey results presented (Fig. 1), 37% of respondents agree that if they encountered a non–tax invoice, they would report it to the tax administration, and 24% strongly agree with this statement.
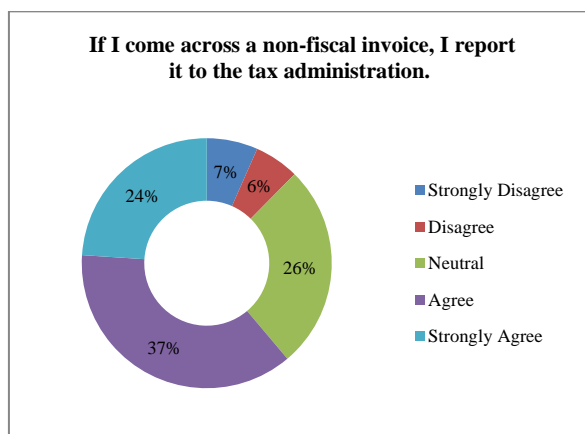

Fig. 1. Consent to report a non–tax invoice
Source: Authors' elaboration from questionnaire data.

According to Figure 2, 34% of respondents remained neutral regarding an increase in their willingness to pay tax obligations with the implementation of e–fiscalization, while only 30% agreed that their willingness to pay would increase.
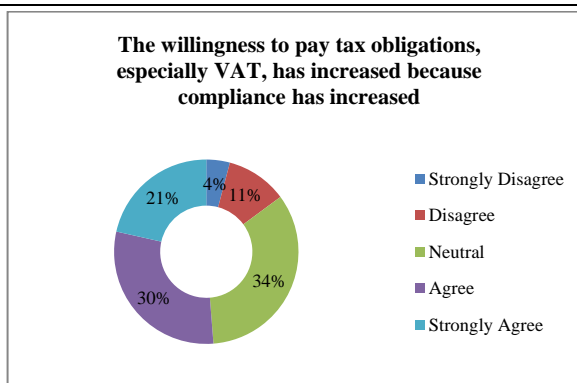

Fig. 2. Agreement on the readiness to pay tax obligations.
Source: Authors' elaboration from questionnaire data.

The majority of surveyed agribusinesses, nearly 62% (Fig. 3), had contracted an accountant to support the implementation and ongoing management of e–fiscalization.

In contrast, only 3% managed to implement e–fiscalization independently, thereby increasing their administrative costs.
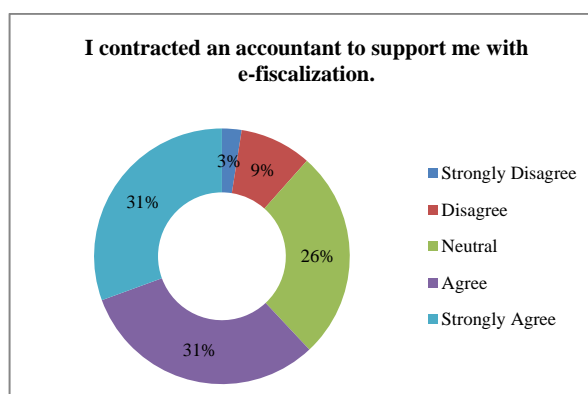

Fig. 3. The need to contract an accountant
Source: Authors' elaboration from questionnaire data.

From the data in Figure 4, it can be concluded that the majority of respondents view e-fiscalization as a factor contributing to the increase in agricultural product prices, with a significant portion strongly agreeing with this statement.
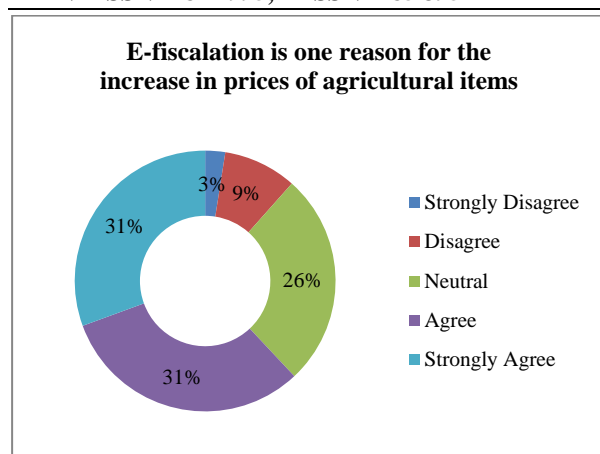
Only 3% of respondents disagree with this assertion.

E-fiscalation is one reason for the increase in prices of agricultural items

Fig. 4. The impact of e–fiscalization on the prices of agricultural items.
Source: Authors' elaboration from questionnaire data.

The answers to questions 1, 2, 3, 4, 5, and 6 are shown in Figures 5, 6, 7, 8, 9, and 10.
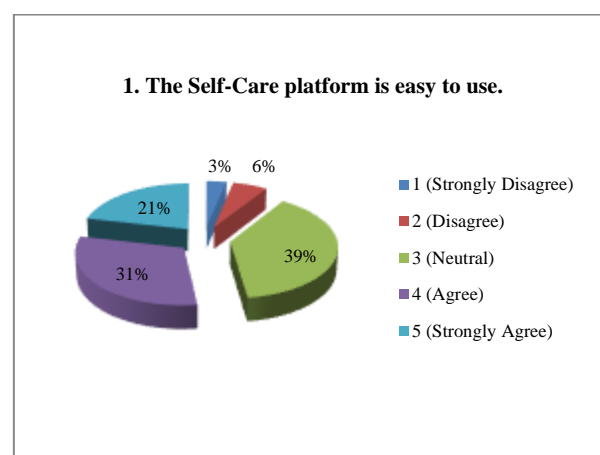
1. The Self-Care platform is easy to use.

Fig. 5. Respondents answers regarding the acceptability of the self-care platform
Source: Authors' elaboration from questionnaire data.

2. E-fiscalization improves financial efficiency in agribusiness.
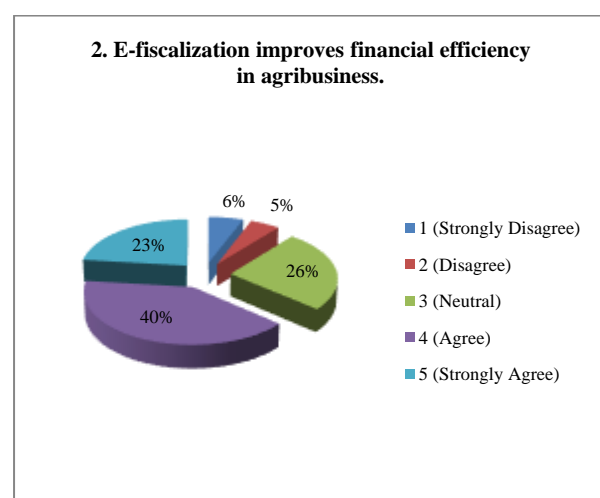

Fig. 6. Respondents answers to the question if E-fiscalization improves financial efficiency in agribusiness.
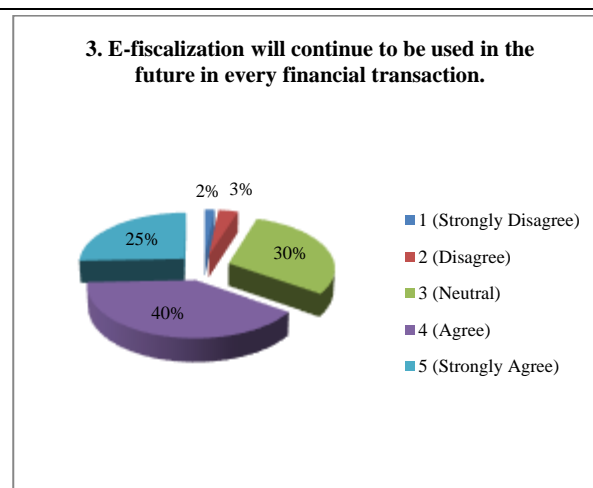Source: Authors' elaboration from questionnaire data.

3. E-fiscalization will continue to be used in the future in every financial transaction.

Fig. 7. Respondents answer if they agree or not as E-fiscalization to continue in the future.
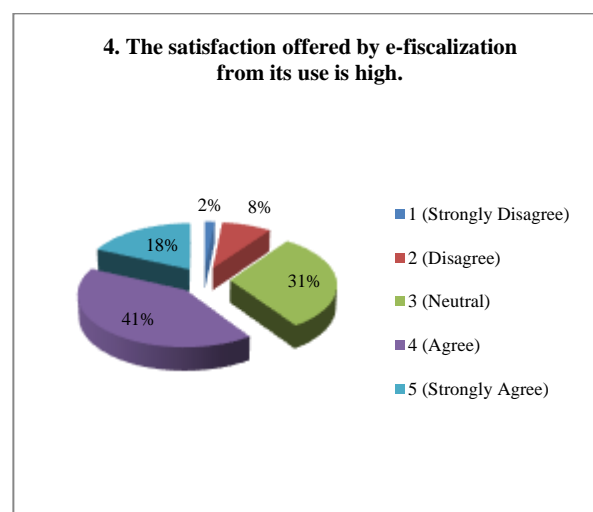Source: Authors' elaboration from questionnaire data.

4. The satisfaction offered by e-fiscalization from its use is high.

Fig. 8. Respondents answers on their satisfaction that E-fiscalization will be highly used.
Source: Authors' elaboration from questionnaire data.

5. The e-fiscalization system is compatible with existing fiscal practices in agribusiness.
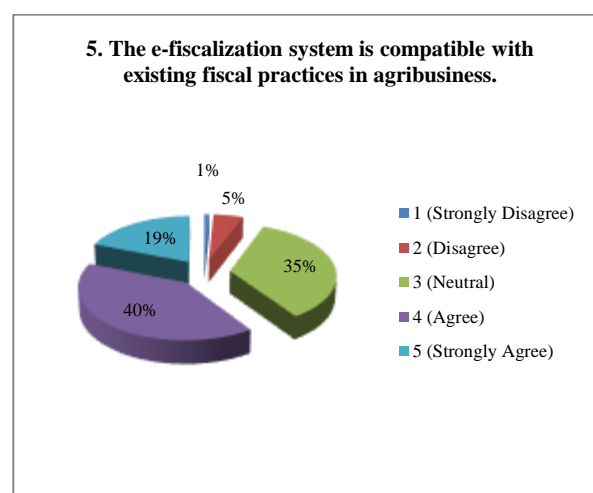

Fig. 9. Respondents' opinion if E-fiscalization is compatible with the existing fiscal practices.
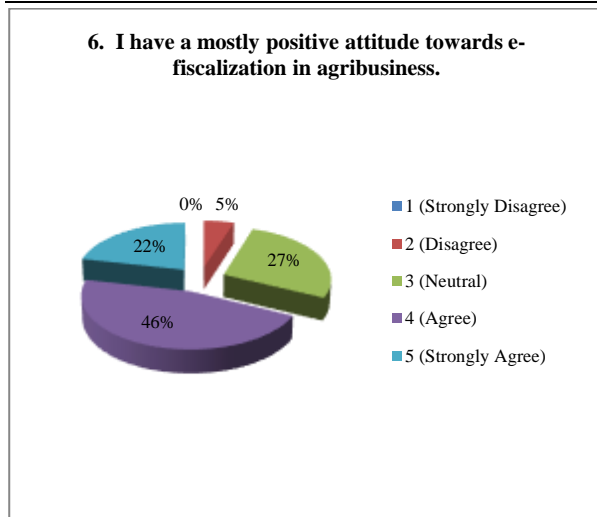Source: Authors' elaboration from questionnaire data.

Fig. 10. Respondents answer the question if they have a positive attitude towards E-fiscalization.
Source: Authors' elaboration from questionnaire data.

Table 2 presents the acceptability of–fiscalization by agri–operators.
Referred to Accep_1, 3% strongly disagree, 6% disagree,
39% are neutral, 31% agree, and 21% strongly agree, indicating that most users find the Self-Care platform easy to use.

Accep_2 shows that 40% agree and 23% strongly agree that e-fiscalization improves financial efficiency, although 26% remain neutral.
Accep_3 shows that 40% agree and 25% strongly agree that e–fiscalization will continue to be used.
For Accep_4, 41% agree and 18% strongly agree about the satisfaction offered by e–fiscalization.
For Accep_5, 40% agree and 19% strongly agree that the system is compatible with existing practices.
For Accep_6, 46% agree and 22% strongly agree that they have a positive attitude towards e–fiscalization.
The overall average behavior (Behav_AVG) is 3.65, which suggests an average positive tendency of users' behavior towards e–fiscalization.
The averages of the various behaviors are similar, indicating a consistency in the perception and behavior of users towards e–fiscalization.

Table 2. Means and standard deviations of the variables

X	MEAN	STD	Y	MEAN	STD
Behav_1	3.66	1.11	Accep_1	3.73	1.24
Behav_2	3.54	1.07	Accep_2	3.47	1.54
Behav_3	3.79	1.06	Accep_3	4.20	0.83
Behav_4	3.6	1.11	Accep_4	3.33	1.19
Behav_AVG	**3.65**	**1.09**	Accep_5	3.73	1.18
			Accep_6	3.80	0.98
			Accep_AVG	**3.71**	**1.16**

Source: Authors' elaboration from questionnaire data.

The standard deviations of the behaviors are relatively narrow (around 1.07 to 1.11), which indicates a moderate distribution of responses. This implies that most users have similar responses to behavioral questions.
The overall acceptability average (Accep_AVG) is 3.71, showing a positive trend of acceptability of e–fiscalization.
Accep_3 (E–fiscalization will continue to be used in the future in every financial transaction) has the highest average (4.20), which suggests that users are particularly inclined to use e–fiscalation in the future.

The standard deviations of acceptability range more (from 0.83 to 1.54), indicating that there is more variation in users' perceptions of e–fiscal acceptability compared to behaviors.
Accep_2 (E–fiscalization improves financial efficiency in agribusiness) has the highest standard deviation (1.54), indicating a wider distribution of users' perceptions of this aspect of acceptability.
The results show a strong and positive relationship between user behavior and e–fiscal acceptability.
High means and relatively narrow standard deviations for behaviors indicate a

consistency of positive perceptions towards e–fiscalization.

On the other hand, acceptability means are also positive, but with more variation, suggesting that there are some aspects of acceptability that are perceived differently by users.

The regression analysis is presented in Table 3.

Table 3. Regression statistics

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.97
R Square	0.95
Adjusted R Square	0.94
Standard Error	0.86
Observations	121

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1,677	1,677	2,290	0.00
Residual	120	87.86	0.73		
Total	121	1,765			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
X -Behav_AVG	0.996	0.02	47.86	0.00	0.96	1.04	0.96	1.04

Source: Authors' elaboration from questionnaire data.

Fig. 11. Regression chart.
Source: Authors' elaboration from questionnaire data.

Figure 11 shows the behavioral variable in the acceptability of e–fiscalization and gives a clear picture of the influence of user behavior on the acceptability of this technology. The table shows a very strong correlation between the behavioral variable and the acceptability of e–fiscalation as Multiple R: 0.97. Thus, 95% of the variation in the acceptability of e-fiscalization can be explained by the behavior of users. The test F=0.00 shows that the model is significant as a whole. This shows that the result is statistically significant ($p < 0.05$). The regression result shows that user behavior has a very significant and positive

impact on the acceptability of e–fiscalization. The model explains a large part of the variation in the data and is statistically highly significant.

CONCLUSIONS

E–fiscalization has significantly contributed to the improvement of transparency and fiscal efficiency in the agricultural sector in Albania. This digital innovation and the accompanying process have enabled more accurate monitoring and reporting of taxes, reducing bad practices and reducing opportunities for fiscal evasion. The behavior of agri–operators has directly influenced the acceptance of e–fiscalization. Operators who have a high level of awareness and are willing to adopt new technologies have shown greater acceptance of the new system. The study shows that the majority of agri–operators agree or strongly agree on the importance and ease of use of e–fiscalization. The implementation of e–fiscalization has brought an increase in administrative costs for agri–operators, including the need to contract accountants. Also, there is a general perception that e–fiscalization has influenced the increase in prices of agricultural items.

Social–psychological factors, such as the perception of ease of use and usefulness of the system, are important in the acceptability of e-fiscalization. There is a general consistency in the behaviors and perceptions of agri–operators towards e–fiscalization. High means and relatively narrow standard deviations indicate that most users have similar and positive responses to questions related to behavior and acceptability. It is important to continue training and awareness programs for agro-operators. These programs should focus on the benefits of e–fiscalization, ease of use of the system and ways that reduce administrative costs. The government should continue to provide support, including subsidies and financial facilities to agri–operators that implement e–fiscalization. This would help speed up the positive perception of future innovations as well. A strong cyber security framework should be implemented to protect sensitive financial transactions and data. Agri–operators should be educated about the importance of security measures and protection against security threats. By following recommendations, Albania can increase the effectiveness and acceptability of e–fiscalization in the agribusiness landscape, ensuring a fairer and more efficient fiscal system.

REFERENCES

[1]Bagozzi, R. P., 2007, The legacy of the Technology Acceptance Model and a proposal for a paradigm shift. Journal of the Association for Information Systems, 8(4), 244–254.
[2]Bandura, A., 1986, Social foundations of thought and action: A social cognitive theory. Prentice-Hall.
[3]Bauer, R. A., 1960, Consumer behavior as risk-taking. In R. S. Hancock (Ed.), Dynamic marketing for a changing world (pp. 389–398). American Marketing Association.
[4]Cani, D., Kolaj, R., Borisov, P., 2023, Fiscalization reform in Albania: an econometric approach to state budget revenues from fiscalized enterprises. Scientific Papers. Series "Management, Economic Engineering in Agriculture and Rural Development", Vol. 23 (3), 97-110.
[5]Davis, F. D., 1989, Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.
[6]Featherman, M. S., Pavlou, P. A., 2003, Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59(4), 451–474.
[7]Feder, G., Umali, D. L., 1993, The adoption of agricultural innovations: A review. Technological Forecasting and Social Change, 43(3–4), 215–239.
[8]Fishbein, M., Ajzen, I., 1975, Belief, attitude, intention, and behavior: An introduction to theory and research. Addison-Wesley.
[9]Hassenzahl, M., 2001, The effect of perceived hedonic quality on product appealingness. International Journal of Human-Computer Interaction, 13(4), 481–499.
[10]Holden, R. J., Babb, J. M., 2011, Perception-action coupling and trust in sociotechnical systems. Theoretical Issues in Ergonomics Science, 12(3), 250–271.
[11]Marcuta, A., Tindeche, C., Smedescu, C., Smedescu, D., Marcuta, l., 2023, Direct and indirect

taxation and its role in reducing the budget deficit. Case study. Scientific Papers. Series "Management, Economic Engineering in Agriculture and Rural Development", Vol. 23 (1), 373-380.

[12]Norman, D. A., 2004, Emotional design: Why we love (or hate) everyday things. Basic Books.

[13]Rogers, E. M., 2003, Diffusion of innovations (5th ed.). Free Press.

[14]Ryan, C., Gross, N. C., 1943, The diffusion of hybrid seed corn in two Iowa communities. Rural Sociology, 8(1), 15–24.

[15]Simtion, D. 2016, Using taxes as economic-financial instruments, Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development", Vol. 16(1), 499-504.

[16]Spielman, D. J., Kolady, D. E., Cavalieri, A., 2010, Public–private partnerships in extension for the delivery of agricultural technologies. IFPRI Discussion Paper 01007.

[17]Stanciu, N. 2018, Study on taxes and charges applied in the European Union countries and in Romania in the field of agriculture, Scientific Papers. Series "Management, Economic Engineering in Agriculture and Rural Development", Vol. 18(2), 449-456.

[18]Swanson, B. E., Claar, B. S., 1986, The farmer's level of participation in agricultural extension programs: Conceptualization and measurement. Agricultural Extension Worldwide, 2(1), 19–26.

[19]Valente, T. W., 1996, Social network thresholds in the diffusion of innovations. Social Networks, 18(1), 69–89.

[20]Valente, T. W., Pumpuang, P., 2007, Identifying opinion leaders to promote behavior change. Health Education & Behavior, 34(6), 881–896.

[21]Venkatesh, V., Bala, H., 2008, Technology acceptance model 3 and a research agenda on interventions. Decision Sciences, 39(2), 273–315.

[22]Venkatesh, V., Davis, F. D., 2000, A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science, 46(2), 186–204.

[23]Zeweld, W., Kidanemariam, H. G., 2017, Factors influencing smallholder farmers' access and utilization of agricultural information and communication technologies in Ethiopia. Library Philosophy and Practice, 1703.