JEL: E62, H29, Q00, Q18

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DIGITAL INNOVATION IN PUBLIC POLICIES: DETERMINANTS OF THE ACCEPTABILITY OF E-FISCALISATION IN AGRIBUSINESS

Purpose. *The study identifies factors influencing the acceptance of e-fiscalisation in Albania's agribusiness, providing information for policymakers and stakeholders to improve the implementation of digital taxation and increase the efficiency of the system.*

Methodology / approach. *The methodology includes a comprehensive literature review and an empirical analysis based on surveys conducted among agribusiness operators in Albania. The survey measures the impact of institutional, individual, logistical, and behavioural factors on e-fiscalisation acceptance. Data collected are analysed using statistical methods, including regression analysis, to test the formulated hypotheses and derive meaningful conclusions about e-fiscalisation acceptance.*

Results. *Innovations and new technologies have significantly transformed Albania's tax system, particularly through the rapid implementation of e-fiscalisation. The process has improved the performance of tax administration and institutions, enhanced the agribusiness climate, and strengthened trust within the financial landscape. E-fiscalisation has contributed to greater transparency, accountability, and governance, ultimately fostering a more equitable taxation process. The holistic quantitative-qualitative investigation fills the research gap by highlighting innovations that restore trust and increase the potential for fairer tax practices. The results reveal significant relationships between tax administration performance, operators' skills, IT service quality, logistical infrastructure, and trust with the acceptance of e-fiscalisation among agribusiness operators, and this is essential for the attitude towards the reform and possible beliefs about similar innovations in the future.*

Originality / scientific novelty. *The originality of the study lies in its specific focus on the agribusiness in Albania, an area that has not been previously researched in the context of e-fiscalisation acceptance. By integrating institutional, individual, technical, and behavioural factors, the research comprehensively explains the determinants of e-fiscalisation acceptance, contributing theoretically and practically with findings and new knowledge to the existing literature and practices in digitisation reforms in public regulatory policies and adjustments in the agribusiness ecosystem.*

Practical value / implications. *The findings provide actionable insights into enhancing e-fiscalisation adoption through improved tax administration, operator skills, IT service quality, logistical infrastructure, and trust. These insights can guide the development of targeted strategies and policies to facilitate the broader and more effective implementation of e-fiscalisation in the agribusiness, ultimately improving efficiency and transparency.*

Key words: *public policies, e-fiscalisation, tax administration, agriculture, fiscal innovation.*

1. INTRODUCTION

Governments around the world are facing development challenges and

multidimensional instability, including economic, social, environmental and climate instability. Especially innovative-technological ones, which over time leads to increased attention to political instruments and the effectiveness of their use. The Fourth Industrial Revolution has brought powerful changes. It includes artificial intelligence (AI), quantum computing, and other advanced technologies. This promotes circular convergence, the green transition, and full digitisation of services. Governments use these tools to improve distribution, redistribution, and regulation. Digitalisation stands out particularly in fiscal policy. It has grown quickly in many places. This includes different countries, regions, and institutions. Despite these differences, the impact is clear. It affects the economy, the business climate, and entrepreneurship.

Research into the impact of digitalisation on public policy is still in its infancy and remains incomplete. Nevertheless, there is an increasing consensus on its relevance. Scholars emphasise the need for new policy formulations and diverse solution mechanisms, including causal models. The acceptability of these mechanisms by enterprises is also gaining attention. Digital governance is assumed to enhance the efficiency of resource use. This efficiency aims to strengthen the economy, improve the business environment, and foster entrepreneurial development. However, the impact of digitalisation in fiscal policy is not uniform. It varies across national, regional, municipal, and institutional levels. These differences depend on stakeholder behaviour and the societal acceptance of public policies. The level of policy acceptability, particularly in fiscal systems, remains crucial. It influences economic growth, long-term sustainability, and financial stability.

The acceptability of e-taxation covers various dimensions, including individual and business perspectives, the role of government policies, and technological factors. Studies often refer to well-established models, such as the Technology Acceptance Model (TAM) [1] and the Unified Theory of Acceptance and Use of Technology [2], to understand the factors influencing electronic tax acceptance. The Technology Acceptance Model is a widely used framework for understanding user adoption of new technologies. The model explains how various factors influence an individual's decision to accept and use technology (Figure 1). Digital transformation causes "chaos" in some areas, while in others, it improves business. These models examine perceived ease of use, usefulness, and other factors. Perceived benefits may include time savings, convenience, and reduced paperwork, while perceived barriers may consist of concerns about security, privacy, or technological complexity [3; 4].

Additionally, the role of government policies and initiatives in promoting electronic taxation has been explored. Studies analyse how supportive regulatory frameworks, incentives, and awareness campaigns can influence the adoption of electronic tax filing [6; 7]. Literature often emphasises the importance of educational programs and awareness campaigns to inform taxpayers about the benefits of electronic taxation and address any misconceptions or concerns. The state of technological infrastructure and a country or region's overall readiness for electronic taxation are crucial considerations. Studies may assess the impact of technological readiness on the acceptance of electronic tax systems. Legal and ethical considerations related to electronic taxation, including

data privacy issues, legal compliance, and the ethical implications of implementing electronic tax systems, are also critical. The impact of fiscal innovation and new practices for increasing transparency and restoring trust, create new institutional and governance potential for both fairer taxation and fair use of taxes [8].

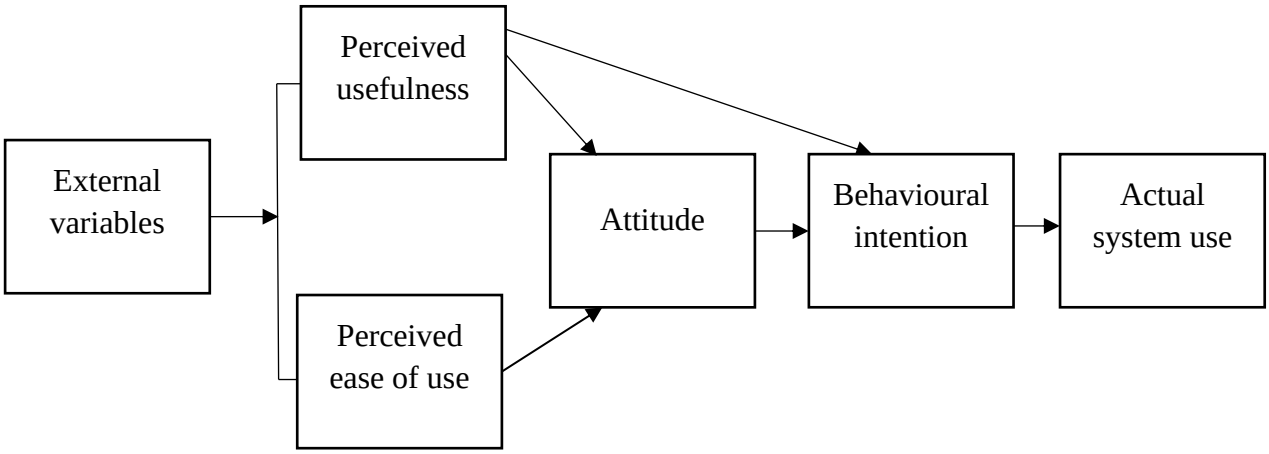

Figure 1. Technology acceptance model

Source: [5].

It is important to note that technology acceptance and e-governance services are dynamic, and ongoing research is necessary. Understanding these evolving dynamics is essential for effectively promoting adoption and compliance with electronic tax systems. E-fiscalisation is the digital process of recording and reporting business transactions to tax authorities in real-time or near-real-time through electronic systems. This typically involves using certified fiscal devices or software that send sales data directly to the national tax authority, improving transparency and reducing tax evasion. The success of e-fiscalisation heavily depends on its acceptance by key stakeholders, especially small businesses, agro-operators, and service providers.

From an economic perspective, the adoption of e-fiscalisation in the agribusiness sector can directly influence transaction costs, reduce informality, and enhance market participation by encouraging formal registration and accurate reporting. These shifts not only improve tax compliance but also potentially widen access to public support schemes, subsidies, and financial services. E-fiscalisation, therefore, plays a catalytic role in integrating informal agricultural producers into the formal economy, fostering investment confidence, and strengthening the overall agribusiness value chain.

In the context of this study, the concept of "acceptability" is defined as the behavioural intention of agribusiness operators to adopt and continue using e-fiscalisation systems. This interpretation aligns with core principles from the TAM and the Theory of Planned Behaviour (TPB), which emphasise perceived usefulness, ease of use, trust, and intention as precursors to technological adoption. By adopting this behavioural lens, the study distinguishes "acceptability" from mere awareness or normative agreement and instead focuses on readiness and commitment to long-term system use. Additionally, to strengthen the contextual relevance of our findings, we refer to comparative cases from the Western Balkans, including Serbia and North Macedonia, where similar digital tax initiatives have been launched. These regional

references help contextualise Albania's experience within broader transitional economies facing similar structural and technological challenges, thereby enhancing the analytical value and applicability of the results.

To theoretically ground the core concept of "acceptability", this study builds upon the TAM and the TPB, both of which are widely used to explain user acceptance of digital technologies. Within this framework, acceptability is interpreted as the behavioural intention to adopt and use the e-fiscalisation platform, shaped by cognitive evaluations (e.g., perceived usefulness and perceived ease of use), normative influences (e.g., subjective norms), and facilitating conditions (e.g., institutional and logistical support). These elements are operationalised through variables such as operator capabilities, trust in the system, administrative support, information and communication technology (ICT) service quality. This integration enhances the analytical rigor of the model and aligns the study with established theoretical paradigms in digital governance and behavioural economics.

The aim of this study is to identify factors influencing the acceptance of e-fiscalisation in Albania's agribusiness, providing information for policymakers and stakeholders to improve the implementation of digital taxation and increase the efficiency of the system.

2. LITERATURE REVIEW

The digitisation of fiscal processes, especially the widespread adoption of e-fiscalisation, represents a transformative change in global economic systems. This literature review focuses on examining the trends, benefits, challenges, and impacts related to digitisation and the spread of e-fiscalisation on a global scale. The digital transformation of the world economy is a multifaceted process involving different sectors. Government initiatives to promote digitisation have been numerous, highlighting the potential benefits for businesses, such as increased efficiency, reduced bureaucracy, and increased transparency [9; 10]. E-fiscalisation, as a critical element of digitisation, is designed to simplify financial transactions and increase fiscal transparency. Other contexts highlight its role in curbing tax evasion, improving record-keeping, and fostering a more responsible business environment [11; 12].

Research on the challenges and opportunities associated with e-fiscal adoption provides valuable insights. Factors such as the cost of implementation, technological readiness, and adaptability of businesses are the main determinants of the success of such reforms [13; 14]. Focusing specifically on the relationship between trust and e-fiscalisation highlighted the importance of user trust in tax authorities and electronic systems. Attitudes and perceptions of entrepreneurs towards e-fiscalisation play a major role in its successful implementation. Previous research has shown that factors such as trust in the system, perceived benefits, and awareness influence the acceptance of digital reforms. Findings suggest that trust in the integrity of tax authorities and the security of e-fiscal platforms significantly affect user acceptance. The factors that shape trust in the context of e-fiscalisation identify security, transparency, and reliability as essential elements [15; 16]. Digital reforms can contribute to economic

growth, job creation, and sustainable development. Assessing these impacts within the Albanian context provides a comprehensive view of the potential benefits and challenges [17; 18].

The literature highlights the expansion and challenges of digital technology and innovation in the economic environment and its specific sectors [19–22]. At the same time, it emphasises the importance of different world models of e-fiscalisation for sustainability, transparency, investments, and consequently, major changes in the paradigm of public policies and the tax ecosystem, attitudes, and acceptability of operators, etc. Three groups of factors that influence the acceptability of e-fiscalisation by business entities were analysed, such as tax administration, businesses' implementation capabilities, services of IT providers, and the logistics necessary for the successful implementation of e-fiscalisation [23–26]. The success of electronic taxation is related to its acceptability by taxpayer entities, and the performance of the tax administration has a significant impact. The capacity of business operators to implement electronic procedures is important for compliance with the tax landscape and affects the acceptance of electronic taxes [27–30]. The literature also supports the importance of IT providing services for the success of e-government, e-tax systems, and acceptance in the business environment [31–34].

Logistics and internet connectivity (including electricity, etc.) are also important for the successful implementation of e-government in the economy, especially in adopting e-taxation [35–37]. Within the cognitive choice model and Prospect Theory, it is emphasised that the behaviour of individuals (or their editing) is related to multidimensional factors (e.g., gains, losses, risk-bearing, personal, ethical characteristics, etc.) [38]. Studies highlight the importance of behavioural factors for Compliance Theory and e-tax [39; 40], including the Technology Acceptance Model and the Behavioural Theory of Planned [41–43].

Digital interfaces are crucial in shaping taxpayers' behaviour [44]. User-friendly platforms with educational resources and interactive features encourage voluntary compliance. Understanding the psychological factors influencing compliance can guide the design of digital systems that encourage ethical tax behaviour. Digitalisation empowers tax authorities with advanced enforcement tools [45; 46]. Data analytics and artificial intelligence enable proactive non-compliance identification, increasing enforcement efforts. This increased enforcement's ability contributes to a fair distribution of the tax burden. Economic theories emphasise increasing audits and fines as a solution to compliance issues, while psychological theories emphasise changing individual attitudes toward tax systems [47]. Their work analyses the government's position at the forefront of the economic challenges arising from digitisation and digital transformation. Rapid global change, due to technological advancements, requires all economies to adapt to the "digital wind" to ensure success.

Trust is a key factor in understanding user acceptance of e-services. They argue that individuals are more likely to trust e-fiscal systems when they perceive them to be secure, transparent in their operations, and reliable in ensuring the financial data. This is consistent with the model, which asserts that trust is a mediator in the relationship

between perceived system quality and user acceptance of e-fiscalisation [48]. It has been identified as an important predictor of user acceptance of e-government services in previous research [49]. Given this perspective of literature and the lack of study exploring the impact of trust in electronic filing software and the intention to adopt electronic filing, this study aims to fill this research gap. Trust has been identified as a key factor influencing the acceptance of technology in various fields. In the context of e-fiscalisation, users must trust both the technology itself and the entities responsible for its implementation. Perceived trust in technology positively affects users' intentions to adopt new systems [50].

Technological developments and changes in fiscal policies in Albania are an important and widely discussed topic. This study analyses the acceptability of the e-fiscalisation platform in Albanian entrepreneurship, with a particular focus on the agribusiness sector, a topic that has not yet been researched. The main research question is formulated as follows: is the acceptability of e-fiscalisation in the agribusiness ecosystem in Albania related to institutional, individual, logistical, and behavioural factors?

3. METHODOLOGY

3.1. Materials and methods. The implementation of the e-fiscalisation platform in Albania has led to a rise in business registrations for a Unique Taxpayer Identification Number. This process has contributed to the formalisation of previously informal economic activities. Although this reform marks progress in public finance and aligns with EU standards, it requires ongoing strategic support. A continuous and innovative approach is needed to enhance logistics, strengthen cybersecurity, and ensure the long-term sustainability of management systems [51]. Albania is currently facing the full implementation of e-fiscalisation. A qualitative and quantitative analysis method is used to conduct a study on the acceptability of e-fiscalisation in Albania's agribusiness. Concepts influencing the acceptability of the electronic fiscalisation system, based on a detailed review of the literature, were considered and conceptualised as follows:

- the role of the tax administration in the e-fiscalisation acceptance;
- the capability of agribusiness operators in the e-fiscalisation acceptance;
- the role of ICT companies, as producers of software solutions, in the e-fiscalisation acceptance;
- the role of logistics of agribusiness enterprises in the e-fiscalisation acceptance;
- trust of the agribusiness operator in the e-fiscalisation acceptance.

Therefore, the hypotheses are formulated as follows:

H_0: Institutional support, operator capabilities, IT service quality, logistical infrastructure, and trust in the e-fiscalisation system have a significant positive effect on the acceptability of e-fiscalisation by agribusiness operators;

H_1: Institutional support, operator capabilities, IT service quality, logistical infrastructure, and trust in the e-fiscalisation system do not have a significant effect on the acceptability of e-fiscalisation by agribusiness operators.

The research instrument used in this study is the questionnaire, addressed to agribusiness enterprises in Albania in its various cities through the Google Forms link and face-to-face meetings. A total of 121 enterprises were surveyed. They are from different forms of organisation. The data obtained from these questionnaires are primary data, and the measurement scale used is the Likert Scale for each question brought as a variable. The selection of the surveyed enterprises was not random; rather, the enterprises were surveyed according to the types of activities they engage in, such as agricultural producers, collection points, processing, local traders and exporters. The interview was done in enterprises of the agribusiness sector with different directions. Processing enterprises, milk collection, meat processing, wine production, brandy and beer production, olive or sunflower oil production, fruit and vegetable processing, wheat processing, egg production, etc., were interviewed. Therefore, based on the nature of the data, in this study, we use descriptive analysis, correlational analysis, and multiple regression analysis. The questionnaire is constructed (Figure 2) in such a way that:

- in the first part, we have the questions that familiarise us with the socio-demographic data of the respondents, such as age, gender, professional experience, the industry in which the enterprise operates, its size, and the type of activity. And questions related to the collection of data on the success of the tax administration in establishing the e-fiscalisation process;
- the second part of the questionnaire deals with questions related to the collection of evidence on the capabilities of operators in the implementation of the e-fiscalisation process;
- the third part raises questions about the collection of evidence on the quality of suppliers of software solutions for the implementation of e-fiscalisation;
- the fourth part addresses questions about the logistical infrastructure that each enterprise has for the successful implementation of the fiscal platform;
- the fifth part addresses questions about the confidence that each enterprise has in the successful implementation of the fiscal platform.

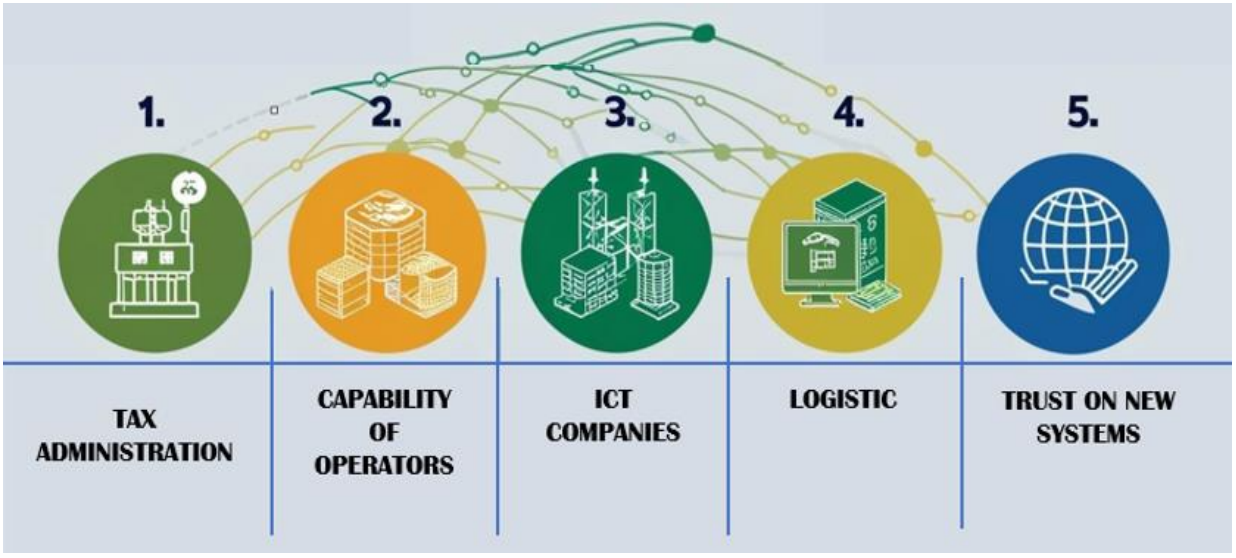

Figure 2. Factors influencing the acceptability of e-fiscalisation

Source: authors' processing.

3.2. The role of the tax administration in the e-fiscalisation acceptance. The implementation of e-fiscalisation involves the use of electronic technologies for monitoring and regulating fiscal transactions. The tax administration plays a decisive role in this process, developing policies and regulations for e-fiscalisation and defining the legal framework, standards, and guidelines for businesses. It sets technical specifications for fiscal equipment, provides training for the proper use of systems, and monitors compliance with laws. The tax administration guarantees the security and integrity of data, prevents manipulation, and oversees the integration of systems with the tax information infrastructure. In case of non-compliance, it conducts checks and investigations, improving policies to adapt to new challenges and opportunities. Referring to the role that the tax administration plays in the establishment of e-fiscalisation and its effective acceptance, the questions conceptualised in the variables are according to the Table 1.

Table 1

The tax administration variable affecting the acceptability of e-fiscalisation

Independent variable			
Concept	Variable	Symbol	Measurement by Likert scale
The role of the tax administration in the e-fiscalisation acceptance	Sufficient time for the implementation	TA_1	1 (Strongly disagree)
	Simplicity in issuing the certificate	TA_2	2 (Disagree)
	Transparency of the process	TA_3	3 (Neutral)
	Sufficient effort by the tax administration	TA_4	4 (Agree)
	Efficient support	TA_5	5 (Strongly agree)

Source: formed on the basis [24].

3.3. The capability of agribusiness operators in the e-fiscalisation acceptance. The items conceptualised about the capability of agribusiness operators' variables in establishing e-fiscalisation are presented in Table 2.

Table 2

The capability of the agribusiness operators' variables affecting the acceptability of e-fiscalisation

Independent variable *(I find the e-fiscalisation to be...)*			
Concept	Variable	Symbol	Measurement by Likert scale
The capability of agribusiness operators in the e-fiscalisation acceptance	Incentivising for startups	OC_1	1 (Strongly disagree) 2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly agree)
	Cost-saving solution	OC_2	
	Supporting efficiency of the business	OC_3	
	Simplified solution	OC_4	
	Environmentally friendly	OC_5	
	Tech-savvy	OC_6	
	Transparent	OC_7	
	Tax-easy	OC_8	
	Minimising the grey economy	OC_9	
	Positive macroeconomic effects	OC_10	
	Unstressful process	OC_11	

Source: formed on the basis [24].

The implementation of e-fiscalisation in the agricultural sector involves enabling agribusiness operators to adopt electronic systems for managing fiscal transactions. Agribusiness operators need the necessary technological infrastructure, including reliable internet connections, electronic fiscal equipment, and software solutions compatible with tax standards. Capability is essential to understand and use these systems effectively. Capabilities of operators encompass the technical and cognitive preparedness of agribusiness actors to implement and utilise e-fiscalisation systems effectively, measured through perceptions of usability, transparency, and compliance readiness. Implementation costs and compliance with regulatory requirements are major challenges, especially for smaller businesses; technical support and assistance with compliance issues are critical. Integrating existing systems and securing data is also important for successful implementation.

3.4. The role of ICT companies, as producers of software solutions, in the e-fiscalisation acceptance. The role of ICT companies in the implementation of e-fiscalisation is crucial. They develop software solutions for generating electronic invoices and recording transactions under tax regulations. ICT companies customise and integrate these solutions to meet specific business needs. Data security is a major concern and includes encryption and safe data storage. ICT provides analysis and reporting tools, allowing businesses to gain insight into their financial transactions. ICT companies must stay innovative and adopt emerging technologies to enhance the capabilities of e-fiscal solutions. Referring to the role that software solution companies play in the establishment of e-fiscalisation and its effective acceptance, the items conceptualised in the variable are according to the Table 3.

Table 3

The software ICT companies' variable affecting the acceptability of e-fiscalisation

Independent variable			
Concept	Variable	Symbol	Measurement by Likert scale
The role of ICT companies in the e-fiscalisation acceptance	Simple and intuitive software	ICTS_1	1 (Strongly disagree) 2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly agree)
	On-time delivery	ICTS_2	
	No hidden costs	ICTS_3	
	Customer support quality	ICTS_4	
	Lag-free device	ICTS_5	
	The annual subscription is fair	ICTS_6	

Source: formed on the basis [24].

3.5. The role of logistics agribusiness enterprises in the e-fiscalisation acceptance. Agribusiness logistics play an important role in the establishment of e-fiscalisation, influencing the management of goods, tracking transactions, and compliance with tax regulations. Logistics infrastructure refers to the availability and reliability of essential technological and physical inputs, such as power supply, internet connectivity, hardware/software availability, and certificate renewal. E-fiscalisation requires full integration with logistics processes for accurate recording and reporting of transactions. E-fiscal systems should be linked to inventory management and points of sale to ensure transparency and accuracy. Agribusinesses must ensure compliance

with regulatory standards and use secure communication protocols. Logistics staff should be trained to use e-fiscal systems and have supply chain collaboration for increased efficiency. Table 4 shows the variables that explain the role of logistics agribusiness enterprises in the acceptance of e-fiscalisation.

Table 4

The logistics of enterprise variables affecting the acceptability of e-fiscalisation

Independent variable			
Concept	Variable	Symbol	Measurement by Likert scale
The role of enterprises logistics in the e-fiscalisation acceptance	Power outage	LOG_1	1 (Strongly disagree)
	Internet disconnection	LOG_2	2 (Disagree)
	Lack of hardware	LOG_3	3 (Neutral)
	Lack of software	LOG_4	4 (Agree)
	The one-year term of the e-certificate	LOG_5	5 (Strongly agree)

Source: formed on the basis [24].

3.6. Trust of the agribusiness operator in the e-fiscalisation acceptance. The trust of agribusiness operators is the key to the acceptability of e-fiscalisation. When agricultural operators have confidence in electronic systems, they are more likely to adopt and implement these technologies. Trust is driven by process transparency, ongoing technical support, adequate training, and data security. Trust reflects the agribusiness operators' confidence in the reliability, security, and performance of the e-fiscalisation platform. Agribusiness operators must be sure that e-fiscal systems are reliable, easy to use, and protected from unauthorised access. A collaborative approach between the government, tax authorities, and agribusiness operators also helps to increase trust and facilitates the successful adoption of e-fiscalisation. Table 5 shows the trust of the agribusiness operator variables affecting the adoption of e-fiscalisation.

Table 5

The trust of the agribusiness operator variably affecting the acceptability of e-fiscalisation

Independent variable			
Concept	Variable	Symbol	Measurement by Likert scale
The role of the agribusiness operator in the e-fiscalisation acceptance	The platform is reliable	TR_1	1 (Strongly disagree)
	The platform does not fail	TR_2	2 (Disagree)
	The platform does not offer downtime	TR_3	3 (Neutral) 4 (Agree)
	I have faith in the platform	TR_4	5 (Strongly agree)

Source: formed on the basis [52].

3.7. Acceptability of e-fiscalisation. In the agribusiness context, the adoption of e-fiscalisation can increase the efficiency and accuracy of agribusiness tax collection by automating processes and reducing manual errors. It can simplify transaction reporting, making it easier for both businesses and tax authorities. E-fiscalisation can contribute to greater transparency in agribusiness transactions. Real-time reporting and monitoring can reduce opportunities for tax evasion and fraud. The e-fiscal system is designed with simplicity and ease of use, so businesses adopt and comply. Automated

reporting can also save time and resources for businesses. Adequate training and support are essential for smooth adoption.

A well-designed and properly implemented e-fiscal system has the potential to bring numerous benefits to both the agribusiness sector and the tax authorities. However, considering potential challenges and creating a supportive environment is essential for successful adoption. Table 6 lists the items that explain the variable of acceptability of e-fiscalisation.

Table 6

The items indicating the acceptability of the e-fiscalisation variable

Dependent variable			
Concept	Variable	Symbol	Measurement by Likert scale
Acceptability of e-fiscalisation	Self-care is easy to use	ACC_1	1 (Strongly disagree) 2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly agree)
	E-fiscalisation improves financial efficiency	ACC_2	
	Continuing use of e-fiscalisation	ACC_3	
	User satisfaction is high	ACC_4	
	The system is compatible with existing practices	ACC_5	
	Positive attitude towards e-fiscalisation	ACC_6	

Source: formed on the basis [53].

4. RESULTS

First, the main characteristics of the sample are analysed. The geographical distribution of the respondents is shown in the Figure 3. As the data shows, 30.58 % of respondents are representatives of agribusiness in the city of Shkodra. Shkodra is followed by Berat with a participation of 19.01 %, followed by the city of Tirana with 13.22 %. And the rest are scattered in other cities of Albania, such as Fier, Lushnja, Elbasan, Lezha, Durres, etc.

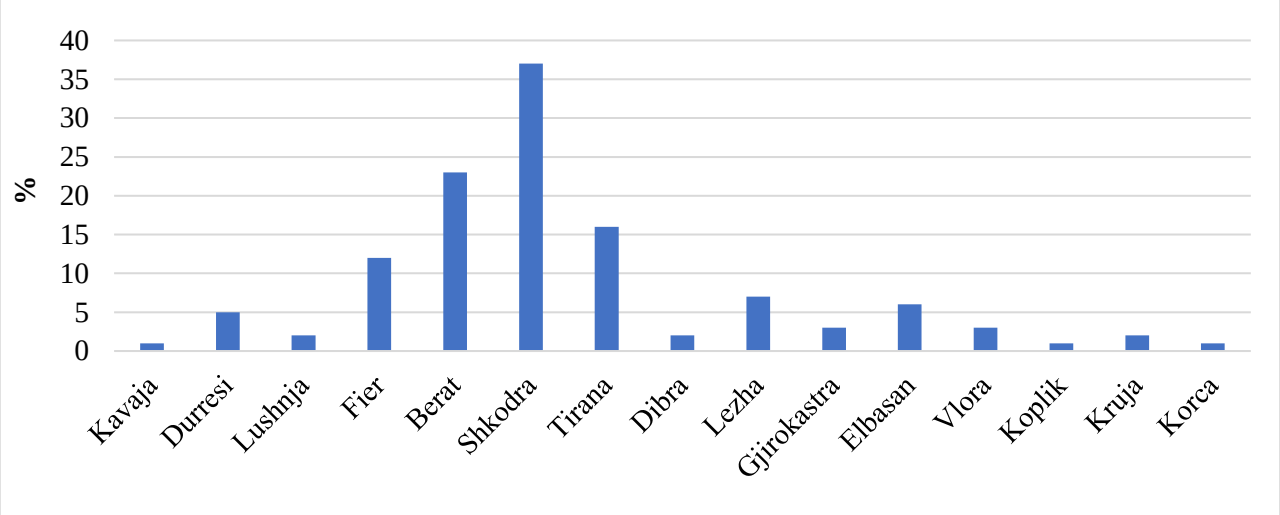

Figure 3. Geographical distribution of surveyed respondents, %

Source: processing of questionnaire data by the authors.

In terms of gender distribution, the sample is somewhat unbalanced. Most respondents were male (83.47 %), and only 16.53 % were female from the total of 121 respondents.

Regarding the work position in the enterprise, out of 121 respondents as operators who have implemented e-fiscalisation and follow the progress of this process, 31 % of respondents were in the position of entrepreneur, and the rest of the respondents (69 %) were operators in different positions in the enterprise.

The average age of the respondents is about 44.28 years (Table 7). The standard deviation (STD) is 9.43 for the respondents, which means that the variation of age is about 9.43 years. Standard deviation is an important statistical measure for understanding the distribution and variation of data in a group. The oldest respondent was 64 years old, and the youngest respondent was 24 years old.

Table 7

Descriptive analysis regarding the age and work experience of the respondents

Indicators	Age	Experience
Mean	44.28	11.09
STD	9.43	7.09
Median	44	9
Max	64	29
Min	24	1

Source: processing of questionnaire data by the authors.

The average work experience is about 11 years (see Table 7). The STD is 7.09 for the respondents; this means that the distribution and variation of the data in the group of respondents is 7.09 years. The respondent with the most work experience had 29 years, and the respondent with the least work experience had 1 year.

The respondents, whether entrepreneurs or employees in an operational function, were 52 % with a secondary education, 43 % with a low education, and 5 % of the respondents with higher education (Figure 4). About 11.57 % of businesses in the surveyed agribusiness sector exercise the type of activity as processors, 0.83 % as domestic traders and exporters. Only 4.96 % of these businesses exercise activity as a collection point, and 5.79 % are crop or livestock producers, and the rest of the respondents, 50.41 %, exercise a combined activity between agricultural producers, processors, collectors, domestic traders, and exporters.

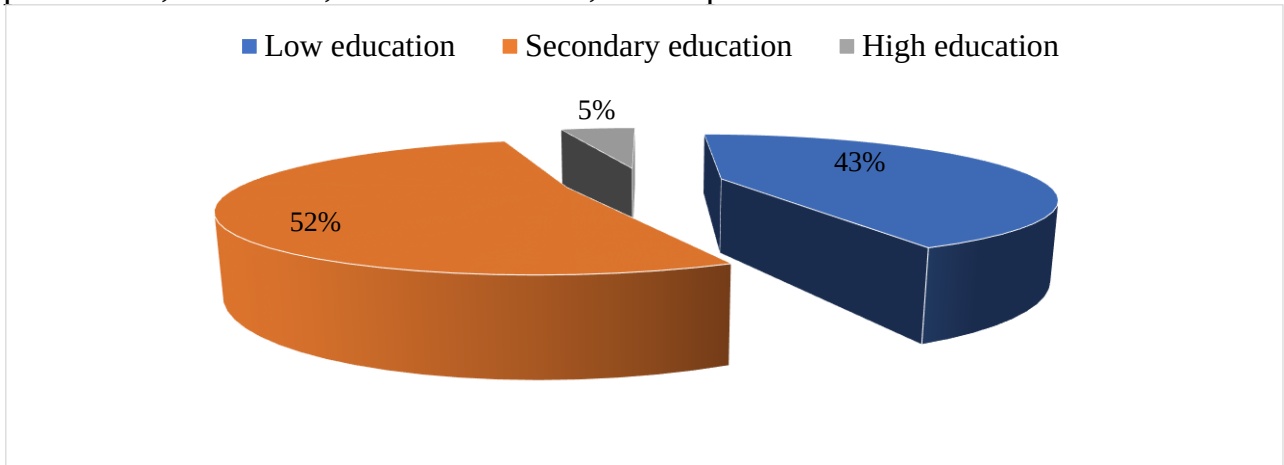

Figure 4. The educational level of respondents

Source: processing of questionnaire data by the authors.

The distribution of the surveyed agribusiness representatives is as follows: 9 %

are large enterprises, 11 % are medium-sized enterprises, 15 % are small enterprises and 65% are micro-enterprises (Figure 5).

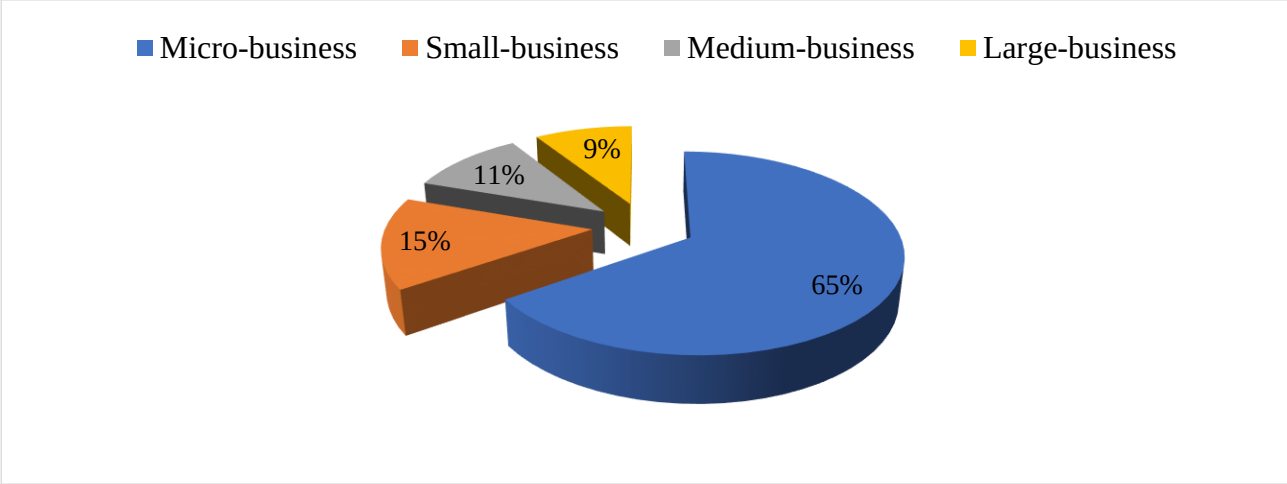

Figure 5. Classification of economic units of surveyed enterprises

Source: processing of questionnaire data by the authors.

As for the industry in which these enterprises operate, we generally have a mixed distribution. About 36 % belong to the production, collection, or processing of milk, 12 % belong to the production, collection, or processing of meat, and 7 % are to produce wine, brandy, and beer. Businesses in the olive and sunflower oil production industry have a distribution of 4 % of respondents. Medicinal plant processing is 10 %, fruit-vegetable processing is 2 %, and 29 % belongs to the remaining industries (Figure 6).

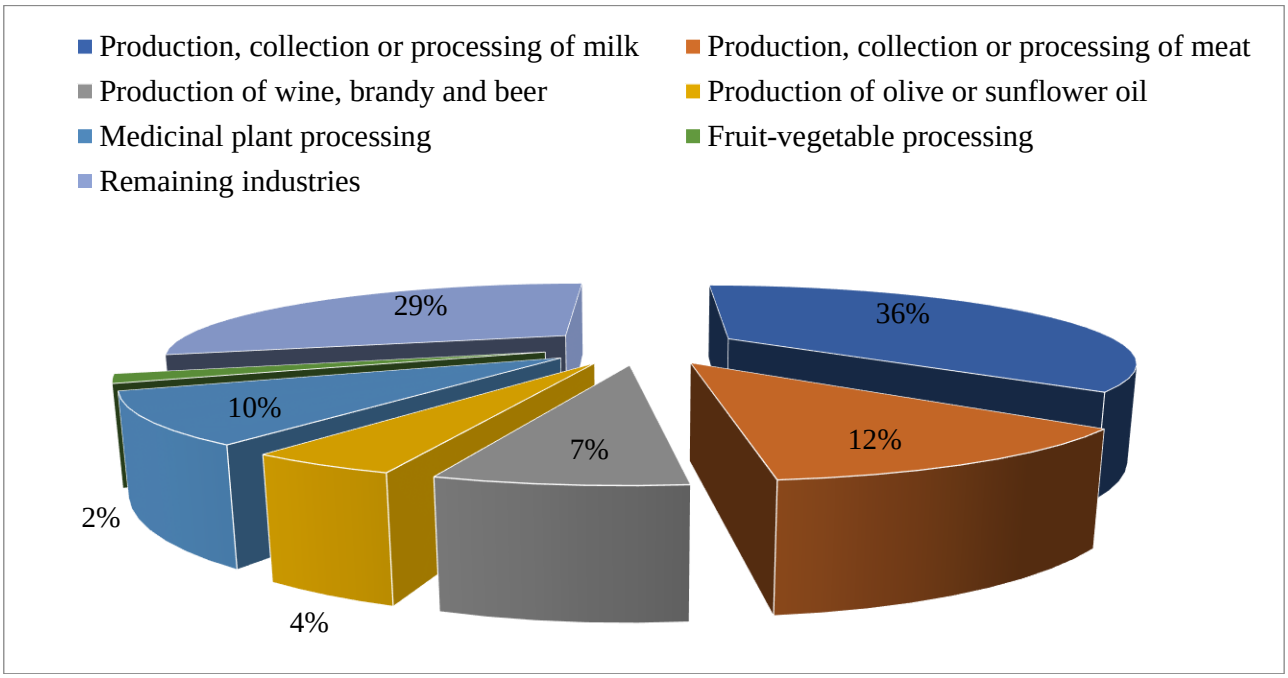

Figure 6. Classification of enterprises according to the industries where they operate

Source: processing of questionnaire data by the authors.

For each set of questions in the continuation of our questionnaire related to the role of the tax administration in the applicability of e-fiscalisation, the skills of

operators, the quality of IT choices, the logistics of agribusiness ventures and trust in this new platform, influencing the acceptability of the e-fiscalisation process in the agribusiness, the mean and standard deviation were used. After we derived the mean and standard deviation for each question in each group in these preliminary analyses, we also derived the mean and standard deviation for each group of questions (Table 8).

Table 8

Descriptive statistics of independent and dependent variables

X	MEAN	STD	X	MEAN	STD
TA_1	3.19	1.07	ICTS_1	3.49	0.99
TA_2	3.36	1.12	ICTS_2	3.64	0.92
TA_3	3.36	1.09	ICTS_3	3.62	0.89
TA_4	3.17	1.16	ICTS_4	3.52	0.99
TA_5	3.15	1.16	ICTS_5	3.38	1.00
TA_AVG	3.25	1.12	ICTS_6	3.53	0.91
OC_1	3.12	1.16	ICTS_AVG	3.53	0.95
OC_2	3.09	1.13	LOG_1	3.89	0.91
OC_3	3.59	1.01	LOG_2	3.90	0.97
OC_4	3.48	1.07	LOG_3	3.88	0.94
OC_5	3.54	1.04	LOG_4	3.87	0.96
OC_6	4.07	0.95	LOG_5	3.83	0.98
OC_7	3.53	0.99	LOG_AVG	3.87	0.95
OC_8	3.47	1.00	TR_1	3.66	1.11
OC_9	3.22	1.14	TR_2	3.54	1.07
OC_10	3.43	0.99	TR_3	3.79	1.06
OC_11	3.17	1.19	TR_4	3.60	1.11
OC_AVG	3.43	1.06	TRUST_AVG	3.69	1.06
Y		MEAN		STD	
ACC_1		3.73		1.24	
ACC_2		3.47		1.54	
ACC_3		4.20		0.83	
ACC_4		3.33		1.19	
ACC_5		3.73		1.18	
ACC_6		3.80		0.98	
ACC_AVG		3.71		1.16	

Source: processing of questionnaire data by the authors.

The results represent the means (MEAN) and STD for our datasets, organised by TA, OC, ICTS, LOG, TR, and ACC labels. This data helps to make comparisons between groups and understand the variability within each group. For example, for the TA question group (TA_1 to TA_AVG): the means range from 3.15 to 3.36. The standard deviations are about 1.07 to 1.16. The overall mean (TA_AVG) is 3.25 with a standard deviation of 1.12. This indicates a moderate overall mean with significant variability. The results for the ICTS group have a slightly higher mean than the TA group and lower variability. The OC group shows greater variability in the mean and moderate overall variability. The LOG group has a high mean and a low variability. The TR group has a high mean and moderate variability. The ACC group shows great variability in both mean and standard deviation.

Groups that achieved the highest averages were LOG (3.87) and ACC (3.71). The least variation (lowest standard deviation) was seen in the LOG and ICTS groups, which means that the data in these groups was more stable. Groups showing the largest variance are ACC and TA, which suggests that those groups are more diverse in the data and structure. This analysis helps comprehend the quantitative variation of groups in the performance of the groups as the distribution of data within each group.

Internal reliability is usually measured using statistical techniques such as Cronbach's alpha formula, which assesses the consistency of responses within a scale or set of items designed to measure the same construct. Cronbach's alpha is a measure of internal consistency and reliability. It calculates the average correlation between all possible combinations of items on a scale. Alpha values range from 0 to 1, with higher values indicating greater internal consistency. Generally, an alpha of 0.70 or higher is acceptable, although higher values are desirable, especially for research purposes. The Cronbach's alpha test resulted in 0.93. This result shows that the internal consistency of the variables has high reliability.

The strongest correlations (Table 9) are between ACC_AVG and TA_AVG (0.83), ACC_AVG and OC_AVG (0.86), and ACC_AVG and ICTS_AVG (0.79). It shows close and strong positive associations between groups. The weakest correlations are between LOG_AVG and the other groups, especially with TA_AVG (0.19), indicating a weak relationship. TR_AVG has the lowest correlations with all groups, especially, the strongest correlations are still relatively weak (highest with ICTS_AVG, 0.52).

Table 9

Correlation matrix

Group variable	TA_AVG	OC_AVG	ICTS_AVG	LOG_AVG	TR_AVG	ACC_AVG
TA_AVG	1.00	-	-	-	-	-
OC_AVG	0.71	1.00	-	-	-	-
ICTS_AVG	0.59	0.69	1.00	-	-	-
LOG_AVG	0.19	0.28	0.32	1.00	-	-
TR_AVG	0.32	0.43	0.52	0.37	1.00	-
ACC_AVG	0.83	0.86	0.79	0.32	0.42	1.00

Source: processing of questionnaire data by the authors.

The results of the correlation analysis help to identify groups that move together and those that are more independent of each other. This analysis is useful for understanding the relationships between variability and averages of different groups, which is valuable for strategic decision-making and data analysis.

Analysis of variance (ANOVA) is used to compare the means of multiple groups and determine whether statistically significant differences exist between them. When interpreting the results of the one-factor ANOVA, it should be noted that the group variance ranges from 0.51 (LOG_AVG) to 0.93 (TA_AVG). The group variances are relatively small, suggesting that the data do not differ much from their mean within each group. Between groups: the sum of squares (SS) is 26.87, the degrees of freedom

(df) are 5, and the quartile mean (MS) is 5.37. Within groups: SS is 453.42, df is 720, and MS is 0.63. Total: SS is 480.29 and df is 725.

The actual F-value (8.53) shows the variation ratio between groups compared to the variation within groups. The p-value (0.00) is significantly less than the significance level of 0.05, which means that there is a statistically significant difference between the group means. The critical F-value is 2.23 at the significance level of 0.05 and the corresponding degrees of freedom. Therefore, the actual F-value is greater than the critical F-value, supports the conclusion that the variation between groups is greater than within groups. This implies that the means of at least one of the groups differ significantly from the others. The ANOVA analysis shows a statistically significant difference between the means of the six groups examined.

As a result of the regression analysis (Table 10), the following regression equation was obtained:

$$Y = 0.02X_1 + 0.40X_2 + 0.28X_3 + 0.27X_4 + 0.09X_5.$$

Table 10

Results of the regression analysis of the influence of factors on the acceptability of e-fiscalisation

ANOVA	df	SS	MS	F	Significance F	
Regression	5	1.720	344	902	0.00	
Residual	116	44	0.38	-	-	
Total	121	1.765	-	-	-	
Group variable	Coefficients	Standard error	t-stat.	p-value	Lower 95%	Upper 95%
TA_AVG (X_1)	0.02	0.09	0.24	0.81	-0.15	0.19
OC_AVG (X_2)	0.40	0.12	3.26	0.00	0.16	0.65
ICTS_AVG (X_3)	0.28	0.11	2.51	0.01	0.06	0.49
LOG_AVG (X_4)	0.27	0.08	3.44	0.00	0.11	0.42
TR_AVG (X_5)	0.09	0.07	1.39	0.17	-0.04	0.23

Source: processing of questionnaire data by the authors.

The multiple correlation coefficient of 0.99, as presented in Table 10, indicates a strong positive relationship between the independent variables and the dependent variable. The model explains approximately 97 % of the variance in the dependent variable, as reflected by the R-square value (0.97). The adjusted R-square, which accounts for the number of predictors in the model, remains consistent at 0.97, which once again confirms the explanatory power of the model and the overall quality of its correspondence.

The standard error of the estimate, reported at 0.62, represents the average deviation of the predicted values from the observed values. This relatively low value suggests a high degree of model accuracy. Moreover, the significance F-value ($p = 0.00$) confirms that the regression model is statistically significant, with a negligible likelihood that the observed relationship occurred by chance. The variables OC_AVG, ICTS_AVG, and LOG_AVG are statistically significant and positively affect the dependent variable. The variables TA_AVG and TR_AVG are not statistically significant and do not appear to have a large impact on the dependent

variable.

The regression analysis demonstrates a strong model fit, with a high R-square and adjusted R-square, low standard error, and statistically significant results, indicating that the independent variables collectively provide a robust explanation of the variation in the dependent variable.

Regarding the linear regression model, the role of the tax administration and trust in e-fiscalisation were found to have limited significance in enhancing the acceptability of e-fiscalisation among agribusiness operators in the agribusiness. To further investigate the relevance of these variables, ordinal logistic regression was used (Table 11), given the categorical nature of the responses (ranging from "strongly disagree" to "strongly agree"). Ordinal logistic regression is recognised as an appropriate method to analyse categorical variables.

Table 11

Logistic regression model (Ordered logit model)

Dependent variable: ACC_AVG				
Method: ML – Ordered Logit (Newton-Raphson / Marquardt steps)				
Included observations: 121				
Number of ordered indicator values: 2				
Convergence achieved after 10 iterations				
Coefficient covariance computed using observed Hessian				
Variable	Coefficient	Std. error	Z-statistic	Prob.
TA_AVG	0.59239	0.29626	1.99957	0.04555
TR_AVG	3.29202	0.67459	4.88002	0.00000
Limit points				
LIMIT_1: C (3)	13.81406	2.73481	5.05119	0.00000
Pseudo R-squared	0.39125	Akaike info criterion		0.78189
Schwarz criterion	0.85121	Loglikelihood		-44.30480
Hannan-Quinn criteria	0.81005	Restr. log likelihood		-72.77961
LR statistic	56.94962	Avg. log-likelihood		-0.36616
Prob. (LR statistic)	0.00000	-		

Source: processing of questionnaire data by the authors.

The dependent variable ACC_AVG is ordinal, meaning that the model assumes a natural ordering of its categories. The independent variable TA_AVG (tax administration's role in e-fiscalisation) was found to be statistically significant at the 5 % level, demonstrating that the role of the tax administration has a meaningful impact on the acceptability of e-fiscalisation among agribusiness operators. Furthermore, the p-value for TR_AVG (trust in e-fiscalisation) was 0.0000, indicating a strong statistical significance at the 1 % level. This suggests that trust plays a substantial and statistically significant role in influencing the dependent variable.

The pseudo-R-squared value, though lower than the R-squared commonly used in linear regression models, was 0.391. This indicates that the model accounts for approximately 39.1 % of the variance in the dependent variable, which is considered a relatively good fit for an ordinal logistic regression model. The likelihood ratio (LR) test further confirmed that the model is statistically significant, as the null hypothesis (that all coefficients are zero) was strongly rejected, with a small p-value (<0.00001),

implying that the model possesses strong predictive power.

Both independent variables (TA_AVG and TR_AVG) were statistically significant predictors of ACC_AVG. The overall model is significant, indicating that the predictors explain a substantial portion of the variability in the dependent variable. Additionally, the threshold (limit point) between the categories of the dependent variable is also significant, further supporting the ordered nature of the dependent variable.

5. DISCUSSION

The agribusiness ecosystem operates within specific constraints, such as agricultural terrain, logistics, knowledge, food and security, energy, etc., and the government and tax authorities must prioritise full transparency in the e-fiscalisation process, affecting policy evaluation and (timely) feedback, improvements, and cost avoidance or system inadequacies. This includes publishing clear, accessible information on how the system operates and its benefits.

Enhancing data security is not solely a technical issue but a strategic component of building trust in digital governance. For agribusiness operators, who may be more vulnerable to both digital exclusion and fiscal penalties, security must be addressed as part of a broader effort to ensure equitable and inclusive digital transformation. Through a balanced approach that emphasises protection, clarity, and empowerment, Albania's e-fiscalisation efforts can achieve broader legitimacy and sustainability.

Transparency is the key to building trust in digital tax systems [54]. Categorisations, such as the development context, the specifics of interested stakeholders, the technology used and the results demonstrated [55], can contribute to increasing the reputation of the tax administration and improving the efficiency of policies and public debate through expertise. Excessive information without proper guidance can overwhelm operators, particularly those in agriculture [56]. Thus, transparency should be paired with targeted, comprehensible interaction and ongoing technical support. Training from tax administration is essential to equip agribusiness operators with the knowledge and skills to use e-fiscal systems effectively. Moreover, adequate training significantly reduces errors and increases satisfaction [57], creating favourable views on the validity of the system and behaviour towards it [58], by reinforcing self-efficacy, external and interpersonal influences, etc. [59], and increasing activism and action in society.

However, complex systems could deter small-scale operators, suggesting the need for user-friendly designs [60]. Ensuring data security is crucial to building confidence. Security concerns often hinder adoption [61], but operators may prioritise usability and cost over security [62]. Thus, security should complement efforts to make the system affordable and easy to use.

Investments in IT infrastructure are vital to agribusiness operations and sustainability. Countries with strong infrastructure generally have a smoother e-fiscalisation implementation [63]. However, there is a need to address spatial-regional disparities in IT access, particularly in rural areas [64]. Legal clarity and

stability are also critical. Unclear regulations can cause confusion and resistance [65], but over-regulation can slow adoption, advocating for a balanced approach [66]. Finally, a collaborative approach between the government and agribusiness operators, supported by targeted awareness campaigns, is essential to building trust and encouraging innovation adoption [67].

Taxpayers' behavioural intentions positively and significantly impact user behaviour [68]. Taxpayers tend to concentrate on the usefulness of a tax-filing method and may be pragmatic in developing general attitudes toward using the method [69]. Acceptance and use of a system are known as a major measure of success from an information systems perspective [70]. Positive perceptions concerning data security and the technological benefits of the system enhance its acceptability among agribusiness operators.

In general, the results of the study confirmed our hypothesis. Although the variables OC_AVG, ICTS_AVG, and LOG_AVG exhibit significant influence on acceptance, TA_AVG (tax administration's role) and TR_AVG (trust) do not. Ordinal logistic regression was used to further validate the significance of TA_AVG and TR_AVG. The results indicate that the role of the tax administration (TA_AVG) is statistically significant at the 5 % level. Moreover, trust (TR_AVG) shows a significance at the 1 % level, underscoring its substantial influence on the acceptability of e-fiscalisation.

Theoretically, this study advances the existing literature on technology acceptance by introducing a comprehensive conceptual framework that integrates institutional, individual, logistical, and behavioural dimensions in the context of e-fiscalisation. While prior research has explored aspects of digital tax reforms, this study contributes by contextualising these dimensions within the agribusiness sector, an area often overlooked in digital governance literature. The findings provide a better understanding of the multifactorial determinants that shape the adoption of digital fiscal reforms, particularly within sectors characterised by operational constraints, such as limited digital literacy, infrastructural challenges, and sector-specific regulatory complexities.

This integrated framework serves as a valuable reference for scholars and policymakers aiming to explore the drivers of digital system adoption in transitional economies. It underscores the necessity of aligning policy design with user capabilities, technological infrastructure, and sectoral realities. The study also highlights the importance of trust, perceived ease of use, and the pragmatic evaluation of usefulness in shaping behavioural intentions toward digital systems, core tenets of the TAM and the TPB.

Practically, the findings yield concrete policy implications for enhancing the adoption of e-fiscalisation in Albania's agribusiness. Improving the efficiency and responsiveness of the tax administration emerges as a central priority. Transparent communication, streamlined procedures, and consistent engagement can strengthen public trust and reduce resistance to new technologies. Equally important is the provision of targeted training programs tailored to the unique needs of agribusiness

operators, many of whom may lack prior exposure to digital platforms. These educational initiatives can foster self-efficacy, minimise operational errors, and enhance user satisfaction with the system.

Moreover, investments in IT infrastructure and the reliability of service provision play a critical role in facilitating system usability and overall acceptance. Addressing logistical challenges, particularly in rural areas where digital and energy infrastructure may be lacking, is critical to ensuring equitable access and smooth implementation of the system. This also includes ensuring the availability of technical support and the affordability of digital compliance for small-scale enterprises. This study also highlights the role of legal clarity and regulatory stability in shaping user perceptions. While unclear or overly complex regulations may create uncertainty and resistance, a balanced regulatory environment, characterised by clear, accessible, and stable guidelines, can support adoption and compliance.

By addressing these multifaceted challenges, Albania can foster a more favourable ecosystem for the implementation of e-fiscalisation. The findings emphasise the importance of a collaborative, user-centric approach to digital tax reform that prioritises transparency, usability, and trust-building mechanisms at all levels of governance.

6. CONCLUSIONS

This study contributes theoretically and practically to the discourse on digital transformation in public policies, particularly in the realm of e-fiscalisation within the agribusiness. The theoretical contribution lies in the development of a multidimensional framework that synthesises institutional, behavioural, and infrastructural determinants of digital system adoption. This model offers a robust analytical tool for future research seeking to examine the complexities of technology-driven reforms in developing and transitional contexts.

Enhancing tax administration performance has a positive and statistically significant effect on agribusiness operators' acceptance of e-fiscalisation. Improvements in the effectiveness and efficiency of tax administration are instilling greater confidence in businesses regarding the new e-fiscal system. The ability of entrepreneurs to comply with technical and procedural requirements related to e-fiscalisation is crucial for its successful implementation. Consequently, continuous training and education for entrepreneurs navigating the e-fiscal platform are essential for fostering acceptance. Furthermore, the quality of services provided by ICT vendors significantly influences the acceptance of e-fiscalisation. Delivering reliable and effective ICT services to agribusiness operators is pivotal for the successful rollout of e-fiscalisation initiatives. Additionally, bolstering the logistics infrastructure within agribusiness enterprises is an important consideration; a robust infrastructure supports the implementation and usability of the e-fiscal platform.

Trust in the security and efficiency of the e-fiscalisation system is also crucial for its acceptance. In this context, the regression model used in the study demonstrates a

strong fit, explaining 97 % of the variance in the dependent variable.

Based on these insights, the following policy recommendations are made. The tax administration should streamline procedures, reduce bureaucratic complexity, and adopt a user-centric communication approach. Regular engagement with agribusiness stakeholders, including consultation forums and participatory policy feedback mechanisms, can foster greater trust and responsiveness.

Targeted training programmes and continuous learning platforms specifically designed for agribusiness operators, particularly in rural areas, should also be developed. Training should focus on practical system usage, compliance procedures, and digital literacy, while providing individual support during the transition phase. Expand investment in digital infrastructure, particularly in underserved regions. Public-private partnerships may be explored to deliver affordable, high-quality ICT services and hardware, as well as to ensure the timely renewal of digital certificates and software updates.

The reliability of electricity supply and internet access in rural areas should be improved through coordinated infrastructure development. This is essential to support continuous system operation and reduce technical disruptions that may lead to non-compliance or system abandonment. It is necessary to simplify and standardise legal requirements related to e-fiscalisation. All policies and procedures should be documented, easily accessible, and communicated through multiple channels to avoid uncertainty and misinformation.

In addition, priority should be given to intuitive system design and user-friendly interfaces, especially for small operators. Affordability should also be considered by subsidising implementation costs for micro and small enterprises during the initial transition period. To bolster trust, the government must adhere to high standards of data privacy and cybersecurity. Transparency in how data is collected, stored, and used must be guaranteed and communicated to users. Nationwide information campaigns should be conducted to highlight the benefits of e-fiscalisation, with the support of farmers' associations, chambers of commerce and civil society. Public trust and user loyalty are strengthened through participatory and inclusive governance approaches.

By addressing these identified barriers and leveraging the enabling factors revealed in this study, Albania can move towards a more modern, transparent, and equitable fiscal environment. The successful adoption of e-fiscalisation in the agribusiness sector not only contributes to improved tax compliance and formalisation but also strengthens institutional trust and economic sustainability.

The economic implications of e-fiscalisation for the agribusiness are substantial. By promoting transparency and formalisation, the system facilitates fairer competition, improves access to finance, and strengthens the sector's ability to benefit from government incentives and programs. As agribusiness firms adapt to digital compliance requirements, their operational efficiency and integration into national and regional markets are likely to improve, contributing to rural economic development and sectoral competitiveness.

7. LIMITATIONS AND FUTURE RESEARCH

The limitations of this study are primarily related to its narrow focus on the agribusiness sector and its application in the specific context of Albania. While this concentration allowed for an in-depth examination of e-fiscalisation adoption in a particular industry, the findings cannot be directly generalised to other sectors or regions. The unique characteristics of the agribusiness, along with the specific institutional, economic, and technological environment in Albania, may limit the extent to which these results can be applied to other industries or countries with different regulatory, economic, or technological landscapes. Consequently, caution should be exercised when attempting to extrapolate these findings beyond the context in which the study was conducted.

Moreover, the study primarily focuses on the initial stages of e-fiscalisation implementation and its immediate acceptance by agribusiness operators. Thus, the long-term impact of e-fiscalisation on tax compliance, business growth and overall economic development remains unexplored. Future research should focus on studying the sustained effects of e-fiscalisation over time, particularly its influence on business operations, tax revenues, and the broader economic environment. Longitudinal studies would provide valuable insights into the evolution of e-fiscalisation and its role in improving tax systems and fostering economic development.

Another limitation lies in the technological aspects considered in this study, which may not fully account for the rapid advancements in digital technologies. As the landscape of digital tools and platforms continues to evolve, future research should consider the integration of newer technologies, such as blockchain, artificial intelligence, and machine learning, into the e-fiscalisation process. These technological advancements can significantly enhance the efficiency, transparency, and security of e-fiscal systems, and exploring their potential impact will provide a more comprehensive understanding of the future trajectory of e-fiscalisation.

Future studies should focus on expanding the scope by examining different sectors and geographical contexts, analysing the long-term effects of e-fiscalisation, and integrating emerging technologies. Such research will contribute to a better understanding of the broader applicability of e-fiscalisation and its potential for creating more efficient and sustainable tax systems.

Funding: this study was conducted without external funding.

Conflicts of interest: the authors declare no conflict of interest.

Use of artificial intelligence: the authors confirm that they did not use artificial intelligence technologies during the creation of this work.

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Citation:

Стиль – ДСТУ:
Cani D., Kolaj R., Dimitrova S. Digital innovation in public policies: determinants of the acceptability of e-fiscalisation in agribusiness. *Agricultural and Resource Economics*. 2025. Vol. 11. No. 2. Pp. 252–280. https://doi.org/10.51599/are.2025.11.02.09.

Style – APA:
Cani, D., Kolaj, R., & Dimitrova, S. (2025). Digital innovation in public policies: determinants of the acceptability of e-fiscalisation in agribusiness. *Agricultural and Resource Economics*, 11(2), 252–280. https://doi.org/10.51599/are.2025.11.02.09.