

Revolutionizing Food Production in Kosovo: Analyzing the Potential of e-Governance in Agriculture and Food Processing and Investigating Factors Influencing Citizen Adoption

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Abstract

e-Government implementation in Kosovo's food processing and agriculture sectors offers significant benefits in terms of efficiency, production quality, information access, and transparency. However, e-government's potential does not guarantee user acceptance, and many governments grapple with low adoption rates of e-Gov. This research empirically examines factors influencing citizen adoption of e-government systems in Kosovo's food processing and agriculture sectors. It assesses the e-Government program's development from 2008 to 2023. Semi-structured interviews were conducted with key figures from the Information Society Agency (ISA), responsible for e-government in Kosovo. ISA has implemented various services, with 151 community e-Gov services available through the e-Kosova government portal, focusing on online grant and subsidy applications for the food and agriculture sector. The study tests the impact of seven factors in e-Gov adoption: Perceived Usefulness, Perceived Ease of Use, Compatibility, Observability, Trialability, Image, and Trustworthiness, combining elements from the TAM and DOI. Data collected from 185 respondents, including food producers, farmers, agriculturists, hotels, and university students, utilized a closed-question questionnaire. Results showed significant influence from Perceived Usefulness, Observability, Trialability, and Trustworthiness on citizens' willingness to use e-government services. Understanding these factors is crucial for governments aiming to increase e-government adoption and make informed IT investments for sustainable development.

Keywords: Agriculture, Food processing, e-Government, Technology acceptance model (TAM), Diffusion of innovation (DOI), Intention to use.

1. Introduction

Governments at a global level have focused their efforts on integrating Information and Communication Technology (ICT) into the modernization of administration. These technologies, such as the Internet and web technologies, have opened new avenues for government functioning and interaction with citizens and businesses, enhancing interaction, transparency, efficiency, and the quality of public administration [1], [2].

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In this context, initiatives of electronic governance, known as e-Government, have taken significant steps in transforming government services from traditional forms to ubiquitous electronic services.

Arendsen et al. define e-governance as the use of ICT to facilitate communication and transactions between governmental institutions and the community. This reduces the time and costs of service delivery, as well as reduces long waits in front of the service desk [3]. e-Government, as a new form of governance, is valued for (1) its responsiveness to citizen and business interaction and needs, (2) its efficiency and effectiveness, as well as (3) transparency and its democratic nature [4].

When e-Governance is applied in the food and agriculture industry, it brings significant benefits in efficiency and access to public services, presenting a key component in the digital transformation of this sector. The use of these services is widespread and exceptional in these sectors. In most countries around the world, the food and agriculture sector utilizes e-Government services to communicate with the government through the Internet, obtain timely and relevant information, and carry out administrative procedures in accordance with legal obligations.

Many initiatives have been undertaken toward providing electronic services for the food and agriculture industry. Nitaliani et al., (referenced in [5]), present several examples of e-Government services for these sectors, offered through government portals, such as the portal of the French Ministry of Agriculture (www.agriculture.gouv.fr), the Australian Department of Agriculture, Fisheries and Forestry (www.affa.gov.au), the Department of Agriculture of Taiwan, and the United States Department of Agriculture (www.usda.gov)[2].

Although there are significant investments in e-Government projects globally, unfortunately, the adoption rate has not been satisfactory. Many governments face low acceptance of e-Government services [6], including the Republic of Kosovo. Even well-designed and adequately funded government projects can face failure if they are not used by a wide range of users [7].

The readiness of intended users to embrace e-Government is a critical factor for the success of e-Government programs. Investments in such projects can bring benefits to users only if they have a continuous readiness to use them [8]. Therefore, research in the field of e-Government services for agriculture and food, and beyond, should focus on identifying the factors that influence user readiness to accept and use the electronic services developed by the government to enhance and facilitate their interaction.

Our research addresses this issue in the context of the Republic of Kosovo by analyzing the factors that influence the acceptance of electronic government systems by the food and agriculture sector.

For this purpose, we conducted a study that involved the empirical testing of seven different factors, such as (1) Perceived usefulness, (2) Perceived ease of use, (3) Compatibility (4) Observability, (5) Trialability, (6) Image and (7) Trustworthiness, which were combined into an analytical model.

This model, based on the Technology Acceptance Model (TAM) and Diffusion of Innovations (DOI), was applied to the surveyed group, which included 185 participants representing food producers, farmers, agriculturalists, hoteliers, as well as students of the Faculty of Tourism and Environment, at the University of Applied Sciences in Ferizaj, in the Republic of Kosovo.

To assess the acceptance and usage of electronic government systems in the food and agriculture sector, we utilized the e-Kosova platform as a case study.

e-Kosova, also known as the government portal, is a web platform that provides a single-entry point to access all electronic services from various government departments,

including those related to the food and agriculture sector. Through this portal, citizens of the Republic of Kosovo can access all government services online. Developed by the Information Society Agency (ISA), e-Kosova has integrated 151 services for the community, including a moderate number of services dedicated to the food and agriculture industry. e-Kosova continues to enrich its services every day, expanding the interoperability of systems [9].

In addition, the research includes an analysis of reports and statistics, as well as semi-structured interviews with the General Director and three senior managers of ISA, the institution responsible for implementing e-Government in Kosovo. This is done to identify the developments in the e-Government program for these sectors in the Republic of Kosovo, covering the period 2008-2023.

The findings of this research are of particular importance in providing a detailed overview of the factors influencing the acceptance and usage of electronic government systems in the food and agriculture sector in the Republic of Kosovo.

Understanding the user decision-making process regarding the adoption or non-adoption of a government electronic system can help in developing policies and strategies to enhance the use of e-Government in these sectors and beyond. By influencing these aspects, it can contribute to increased efficiency, transparency, and access to public services, as well as making informed investments in information technology for sustainable development.

2. Materials and Methods

Despite efforts to digitize the operations of the food and agriculture sector, as well as the digitalization of communication and services offered by the government to these sectors, this voluntarism has provoked different reactions from users accustomed to these developments. The efforts of these sectors to apply Information and Communication Technology (ICT) to create a better customer experience, and on the other hand, the government's efforts to apply ICT to create a better experience with businesses in these sectors, have faced resistance from users accustomed to exploiting the old way of operations.

These reactions depend on factors that need to be researched to be understood and further elaborated upon to build appropriate policies to promote the adoption and use of electronic systems.

The effort of researchers to predict the usage of information technology and identify the factors that influence an individual's decision to accept or reject a system began as early as the 1970s. As demands for new technology increased, organizations faced a rising rate of failure in adopting these technologies [10].

The lack of willingness to use electronic services or the low level of their acceptance is recognized as an endemic problem for service providers [11]. This is the decisive factor for the success or failure of an Information System [12].

One way to prevent investments in projects that may be unacceptable and rejected by users is seen by Fred Davids in a preliminary assessment of whether the system will be acceptable. Therefore, by assessing acceptability, diagnosing the reasons why the system may not be fully acceptable for use, and taking corrective actions to increase its acceptability, we will be able to prevent failure [13].

Many studies have been conducted to analyze (1) the factors influencing customers' acceptance of electronic services offered by the food and agriculture sector, and a moderate number of them analyze (2) the factors influencing the food and agriculture sector in using electronic services offered by the government.

1. From the first perspective, these studies have analyzed the factors influencing customers' decisions to use some of the implemented electronic systems in these sectors. Most of the research focuses on the usage of online food delivery (OFD) services, followed by smart systems for agriculture, rural e-commerce, agricultural information systems, traceability systems in agri-food supply chains, etc. [14-19].

OFD, short for "Online Food Delivery," refers to "The process whereby food that was ordered online is prepared and delivered to the consumer". It encompasses a range of different functions, including offering a variety of food options to the customer, receiving, and transmitting orders to the food provider, monitoring payments, organizing food delivery, and providing the ability to track the order [20].

These studies identified various motivating factors for the use of these systems, such as human attitudes and subjective norms [14], understanding the underlying motivations of intended users [16], perceived usefulness, perceived satisfaction, trust, and social influence [17][19], expected performance, perceived task-technology fit [19], perceived control and perceived cost of system installation and operation, group identification and conformity to its expectations [18], convenience motivation, hedonic motivation, cost saving, and time reduction in shopping [15].

2. As for the electronic services offered by the government, including those accessible through mobile technology (m-Government), there are numerous scientific articles in the research databases, that have analyzed the factors influencing the acceptance of e/m-Government and the adoption of electronic services in general, both in developed and developing countries. These studies address the phenomenon from the perspectives of citizens, businesses, and government officials [6], [7], [21-39], but the factors leading to system failure are still a matter of debate in the literature [16].

However, at a global level, there is limited research specifically focused on developments in e-Government for the food and agriculture sector, as well as identifying the factors influencing the adoption of e-Government by this sector [8], [40-42]. The food and agriculture sector has its own unique characteristics and challenges in the use of digital technologies; therefore, more research is needed in this direction to better understand the specific factors and challenges that impact the acceptance of e-Government in this important sector of the economy.

No research has been conducted in the context of the Republic of Kosovo regarding the factors influencing citizens and businesses to use electronic systems provided by the government within the e-Government project, including the food and agriculture sector. This research is the first of its kind.

To understand the scientific work in this field, particularly regarding the acceptance of electronic governance systems, including mobile technologies (m-Gov), Zejnullahu and Baholli conducted an analysis of research in the user readiness field for using these services in 2017. From their study, they found that most researchers attempting to address barriers to successful system implementation were primarily focused on the domain of the G2C (government to citizen) [6-7] [22-33][35-36],[43]. They applied various established models and theories in their work, such as TAM, DOI, and the Unified Theory of Acceptance and Use of Technology (UTAUT), expanding these theories with additional factors to develop new models for examining the acceptance of electronic systems [21]

Of all the models, TAM was identified as the most applied model in the majority of research of this nature, integrated with other theories and/or expanded with additional variables. The recommendation of many researchers was to integrate TAM with other theories to address the rapid changes in Information/Technology Systems (IS/IT). Researchers considered the expansion of TAM necessary to adapt to the specific nature of electronic governance systems and to improve the specificity and explanatory power of the model.

Based on this, this study expands TAM with DOI and two additional constructs. Let's take a brief look at these two theories.

2.1 Technology Acceptance Model (TAM)

The model proposed by Fred Davis in 1986 is a more influential adaptation of the Theory of Reasoned Action (TRA) [23], [44-45] to predict and explain the actual usage of new technology. According to Davis, "actual system usage is a behavior" [46]. Therefore, he regarded TRA, developed by Martin Fishbein and Icek Ajzen, as a highly suitable model to explain and predict this behavior [47].

To develop TAM, Davis made two modifications to TRA. Firstly, he did not consider subjective norms for predicting an individual's actual behavior. Secondly, for predicting the Intention to Use (ITU) of new technology, he used two beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

Perceived Usefulness (PU): It is the degree to which a person believes that using a particular information system will enhance their job performance [46]. Many studies indicate that the perceived usefulness of a technology has a positive impact on the user's attitude and behavior toward accepting the technology [48], [49].

Perceived Ease of Use (PEOU): It is the degree to which a person believes that using a particular system requires little effort or difficulty" [46].

According to TAM, the two distinct beliefs of an individual (PU and PEOU) determine Attitude Toward Using, and in turn, attitude helps in developing the Intention to Use a system. On the other hand, ITU is a determinant of the actual system usage [7] and is a key element in TAM.

Intention to Use (ITU) is an assessment of how strong an individual's willingness is to perform a specific behavior (to use an information system) [13],[50].

While the TAM model continued to be widely used and analyzed by many researchers for its explanatory power, reliability, stability, and validity, Davis, Venkatesh, and Bala attempted to expand this model by incorporating various variables that could influence the explanatory power of the model, resulting in two main expansions: TAM2 and TAM3 [51],[52]. By understanding ITU, we can predict the actual system usage by intended users. Therefore, understanding the factors that influence an individual's readiness to use a system allows researchers to better predict the likelihood of an individual using it [53]. On the other hand, TAM theorizes that PEOU has a significant and positive impact on perceived usefulness because, according to Davis, the easier the system is to use, the more useful it can be [51].

2.2 Diffusion of Innovation (DOI)

Rogers is the author of this theory, which is one of the most widely used models in the field of technology diffusion and adoption. It is a sociological theory that focuses on the process of innovation migration from creation to adoption [50].

This model has been utilized as an analytical framework in numerous studies across different disciplines such as political science, economics, history, public health, communication, and education [54]. DOI is presented as a suitable model, especially for the initial adoption environment of technology, aiming to assist in accelerating the process of innovation diffusion, which often presents challenges for individuals and organizations [55].

According to Rogers, the process of adopting an innovation is influenced by five key characteristics of the innovation: Relative Advantage, Complexity, Trialability, Observability, and Compatibility.

Relative Advantage: It is the degree to which an innovation is perceived as more useful and better than the idea/product it replaces, in terms of economic aspects, social status,

ease, and performance. The higher the perceived relative advantage of the innovation, the faster its adoption rate is expected to be [56].

Complexity: It is the degree to which an innovation is perceived as difficult to understand and use by potential adopters. If the innovation is easily understood by most individuals, it is more likely to be adopted quickly [56].

Compatibility: It is the degree to which an innovation is perceived to be in line with the norms and values of the social system, past experiences, and the needs of potential adopters. An innovation that is perceived as compatible will be adopted much faster than one that is not perceived as such [56].

Trialability: It is the degree to which an innovation can be experimented with on a limited basis before full adoption. A new idea that can be tried out will be adopted much faster than an idea that cannot be experimented with before adoption [56].

Observability: It is the degree to which the results of an innovation can be easily observed by others and the individual can easily discuss and present the new idea to friends, colleagues, or family members. The easier it is for an individual to see the results of an innovation, the more likely they are to decide to adopt it [56].

2.3 Why did we choose TAM and DOI as models to refer to?

The reasons for choosing TAM and DOI as reference models are as follows:

The predictive power and widespread application of TAM: TAM is one of the most widely used models in research related to the acceptance and adoption of electronic government systems. This is due to the parsimony of the model [57] and the considerable theoretical and empirical support that TAM has received [50].

Relevance of TAM to information systems: TAM is a suitable model for predicting the acceptance and use of information technology in the workplace and has good applicability in the context of information systems [57],[58].

Ease of application and expansion of TAM: TAM is easily applicable and suitable for research on the adoption and acceptance of any type of technology. It allows for the incorporation of additional factors into the base model [33]. The recommendation of most researchers to expand TAM to improve its specificity and explanatory power, especially through integration with DOI, has facilitated the expansion of TAM in this study with constructs from DOI and two additional beliefs: image and trust.

Suitability of DOI for the context of developing countries: DOI is one of the earliest theories of technology adoption and is suitable for understanding technology adoption, particularly in the context of developing countries [23]. The application of DOI aligns with the research circumstances in Kosovo, a transitioning country with an underdeveloped economy.

The initial adoption of technology: DOI is appropriate for the environment of initial technology adoption. At the time of conducting the research, e-Kosova is still in the early stages of adoption. Therefore, integrating these two models is seen as the right choice to predict users' readiness to use this system.

General use of TAM and DOI: TAM and DOI are widely used models in research on the adoption of electronic government systems at an individual level [57]. Since the users of e-Kosova are individuals, the integration of these models in the research on individual-level adoption provides an additional rationale for using these two models.

Researchers who combined TAM and DOI have observed similarities between TAM variables and perceived attributes in DOI. These similarities were identified between TAM's PU and PEOU variables and Rogers' attributes of Relative Advantage and Complexity [23], [45], [58], [59].

Based on this, we have chosen to investigate two constructs from TAM: (1) PU (Perceived Usefulness) and (2) PEOU (Perceived Ease of Use), as well as three attributes from DOI: (3) Compatibility, (4) Trialability, and (5) Observability. Additionally, two additional variables have been explored: (6) "Image" and (7) "Trustworthiness," as these variables are included in most studies on the adoption of e-government services.

Image is defined as "The extent to which the use of an innovation is perceived to improve one's image or status in a social system" [59]. A system that is perceived by users to enhance their image is more likely to be accepted easily by the user.

Trustworthiness is defined as the user's belief that a particular service does not pose a threat to security and privacy [22] and that the service will function as intended with acceptable consequences for the user [43].

The seven factors mentioned above constitute the applied multifactor research model for studying the comprehensive approach to measuring the factors that play a key role and are related to the readiness to use e-government services in the food and agriculture sector, as presented in Figure 1.

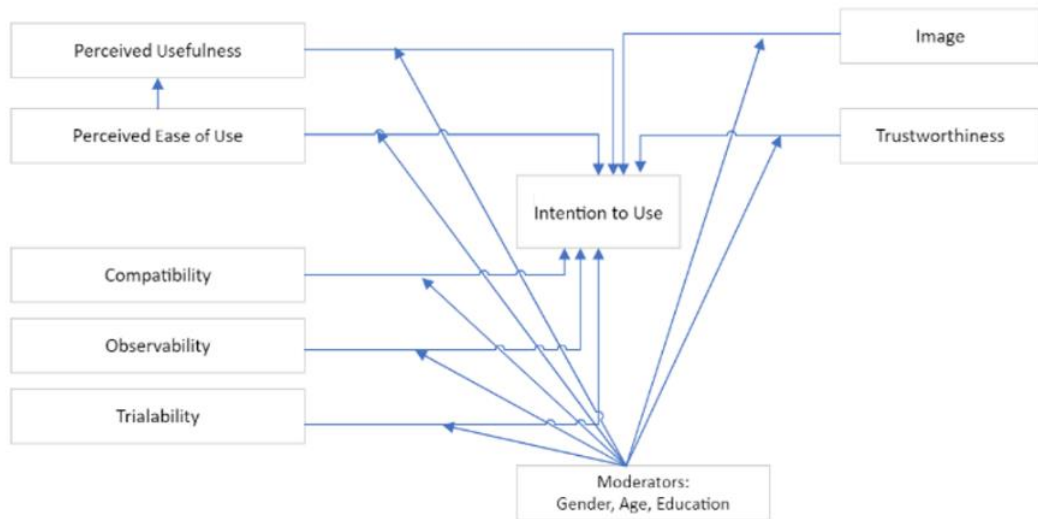


Figure 1 Relationship between researched variables

To generate information in response to the main objective of the research, we formulated a research question and constructed seven hypotheses to be tested.

Q1: How strong is the readiness of the food and agriculture sector to use e-government electronic systems, through the e-Kosova portal?

Hypotheses:

H1: Perceived Usefulness has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

H2: Perceived Ease of Use has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

H3: Perceived Compatibility has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

H4: Perceived Trialability has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

H5: Perceived Observability has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

H6: Perceived Image has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

H7: Perceived Trustworthiness has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

e-F/A Service: e-Gov for Food/Agriculture

2.4 Methodology

To conduct the research, we have used a combined methodology, integrating analytical, representational, and case study methods.

The analytical method has been used to examine and interpret the data presented in the United Nations E-Government Survey 2022 (Department of Economic and Social Affairs) and sources from the online platform "Statista," which provides reliable statistical data from a wide range of sources, including government institutions, international organizations, private companies, surveys, and other trustworthy sources. This data has been utilized to assess developments in the field of e-governance at both international and national levels, with a focus on electronic systems developed for the food and agriculture sector by the government.

To increase the level of information regarding developments in the e-Government program for the food and agriculture sector in Kosovo, we conducted a case study in which we realized semi-structured interviews with the General Director and three senior managers of ISA, the institution responsible for implementing e-Government in Kosovo.

The representative method was used to select a representative sample from the target population and include various representatives from the food processing and agriculture sector in Kosovo in the survey. Based on the relevant literature review, a self-administered questionnaire with closed-ended questions was developed. The questionnaire consists of 31 questions organized into 8 constructs to assess the factors influencing e-Government adoption. All constructs were evaluated using a 5-point Likert scale. Data for the analysis were collected from 185 respondents representing food producers, farmers, agricultural workers, hoteliers, as well as students of the Faculty of Tourism and Environment, at the University of Applied Sciences in Ferizaj, in the Republic of Kosovo. The questionnaire was distributed anonymously through the Office Forms 365 platform. The data were analyzed using SPSS (Statistical Package for the Social Sciences).

3. Results and Discussion

The main objective of this research is to scientifically investigate the factors influencing the acceptance of e-Government systems in the food processing and agriculture sector by the citizens of Kosovo. Additionally, the research aims to present the developments of the e-Government program for these sectors at the international level and in the Republic of Kosovo.

3.1 Developments in e-Government at the Global and National Levels.

Based on the United Nations e-Government Survey 2022 (Department of Economic and Social Affairs) and the online platform "Statista," e-Government is observed as a pronounced trend in the global and regional context. Technological advancements and the increasing use of the Internet have influenced investments by many countries and regions in developing e-Government systems. The aim of this trend is to improve the delivery of

public services, transparency, citizen participation, and the efficiency of public administration.

In this trend, Europe ranks highest in the e-Government Development Index (EGDI), followed by Asia and the Americas (Figure 2). Denmark specifically is ranked first with a near-perfect E-Government Development Index (Figure 3). This indicates that European countries have achieved a high level of development in e-Government systems and are leaders in utilizing technology to provide more efficient and suitable government services for citizens. The EGDI (E-Government Development Index) assesses the development of e-Government at the national level based on three components: the index of online services, the index of telecommunication infrastructure, and the index of human capital [60] [61].

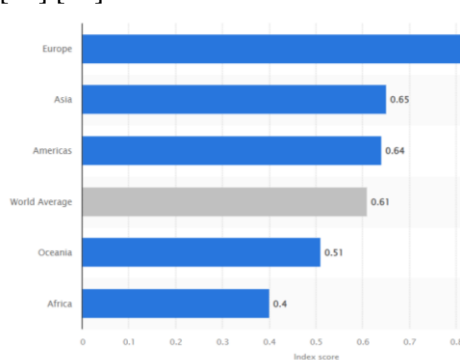


Figure 2. E-Government Development Index (EGDI) of global regions in 2022[61]

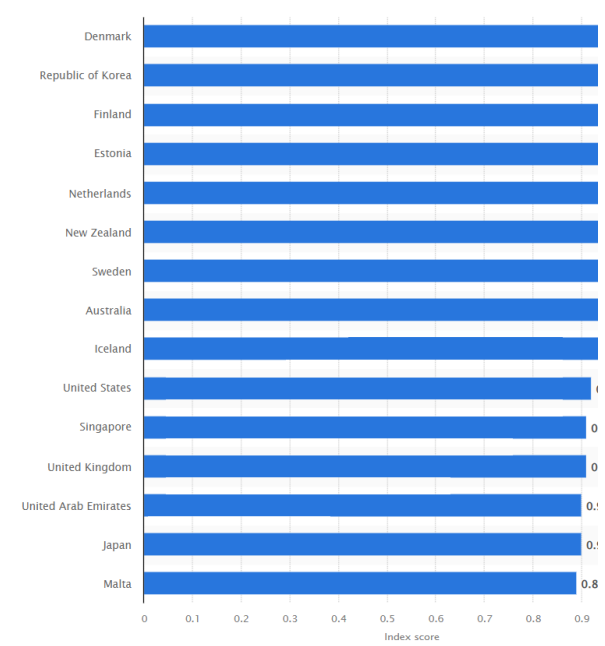


Figure 3. World e-government leaders based on the e-Government Development Index (EGDI) in 2022 [61]

According to the E-Government Survey 2022 (UN), the average number of online services provided in European countries are 19 services; on average 17 online services are offered in Asian countries; 16 online services in the Americas, and 12 online services in Oceania and Africa (Figure 4) [60].

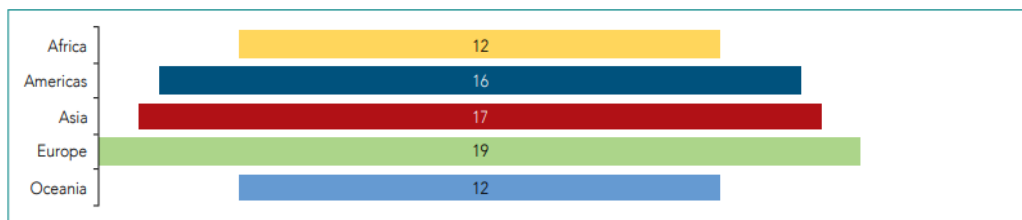


Figure 4. The average number of services offered in each region, 2022 [60]

Regarding e-Government services for the food and agriculture sector at a global level, it is important to emphasize that not all services can be fully conducted online. Although technology and digitalization have brought many advancements in this sector, some processes still require individuals to be physically present in administrative offices to successfully fulfill the service (Figure 5).

Figure 5 shows that a small number of countries offer services that can be fully completed online, specifically:

- Apply for land title registration: can be partially completed online in 139 countries, while it can be fully completed online in 33 countries.
- Apply for an environmental permit: can be partially completed online in 133 countries, while it can be fully completed online in 54 countries.
- Register a business: can be partially completed online in 177 countries, while it can be fully completed online in 93 countries.
- Apply for a business license: can be partially completed online in 167 countries, while it can be fully completed online in 81 countries.

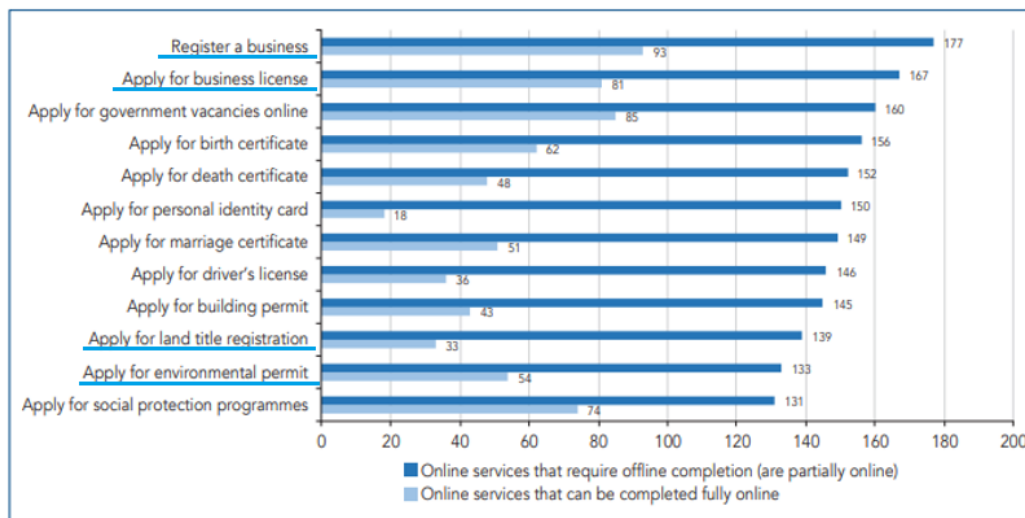


Figure 5. Number of countries offering selected services that can be completed partially or fully online, 2022 [60].

If we look in the national context, the e-Government program has brought significant developments in the public administration of Kosovo. Since the inception of this program in 2008, there has been a continuous effort to digitize government services and utilize information and communication technology. In the food and agriculture sector, e-Gov services have been focused on providing online applications for grants, subsidies, property tax payments, and other services for businesses. Currently, the government has initiated a public discussion on the draft strategy for e-Government in Kosovo for the period 2023-2027.

Next, we will present the findings from the interviews conducted with officials from ISA (the responsible institution for e-Governance implementation in Kosovo) to provide a comprehensive and detailed overview of developments in the field of e-Government for the food and agriculture sector in the Republic of Kosovo. The interviews were guided by five open-ended questions and provided an opportunity for additional information.

Question 1: What are the developments in the e-Government program in Kosovo from its inception to 2023?

Kosova has made significant progress in digitizing its public administration, placing digitalization as one of its priorities. The initiation of this program dates to 2008 when the Government of the Republic of Kosovo decided to improve its operations by leveraging advancements in information and communication technology. In this regard, it adopted the first e-Government Strategy for the period 2009-2015, aiming to provide quality, accessible, and cost-effective services to citizens, businesses, and governmental institutions.

Since then, a range of electronic services have been implemented, mostly in the form of web applications used in various government departments for internal operations (G2G - Government-to-Government), as well as for citizen interaction (G2C - Government-to-Citizen) and business engagement (G2B - Government-to-Business). These services encompass state registries and are centralized services.

Some of the G2G services implemented by ISA, which are used in all central and local institutions, include Asset Management System, Electronic Document Archiving System, Human Resources Management Information System, Work Presence Monitoring System, Vehicle Expense Management System, ID Card Production System for IRK officials, Civil Status System, and e-Box.

Regarding G2C and G2B, ISA has made available over 151 services that can be accessed through the e-Kosova portal, which serves as a single point for providing digital transactional and personalized government services from all levels of government. [9]

Question 2: What developments have been made within the e-Government program for the relevant institutions in the food and agriculture sector?

All the aforementioned G2G services are implemented in all institutions, including the food and agriculture sector. As for services for businesses and citizens, e-Kosova dedicates a moderate number of services specifically to this sector. This mainly includes online application forms for grants and subsidies, online property tax payments, and other related payments, as well as services related to business registration and licensing.

Question 3. Do the relevant institutions for food and agriculture have implemented other electronic systems for citizens and businesses, in addition to those implemented by ISA within the e-Government program?

Yes, institutions have specific systems that they use internally, which will gradually be integrated into e-Kosova. Since 2017, ISA has developed the Government Gateway (GG) interoperability platform, which is the main integration solution on the back end. The e-Kosova portal is integrated with GG, providing the high potential to connect existing services within government institutions and make them accessible through the e-Portal.

Question 4.: What is the outlook for the future of the e-Government program in the food and agriculture sector?

Currently, we have developed the draft strategy for e-Government in Kosovo 2023-2027, which aims, among other things, to enhance new functionalities and improve the use of existing systems, making every service accessible through e-Kosova for all institutions, including the food and agriculture sector.

Question Q5: Have you conducted any studies to identify the factors influencing the adoption of e-Government services by the food and agriculture sector?

No, we haven't conducted such a study. The only research we have conducted was to measure the overall user satisfaction with the e-Kosova platform, but not specifically on the other factors that may influence the adoption of e-Government services by the sector in question.

3.2 Factors influencing the adoption of e-Government in the food and agriculture sector.

Statistical methods were used to analyze structured data collected through an online questionnaire. Data for each variable was recorded in SPSS, and descriptive statistics were generated as well as tested relationships between variables.

The survey was conducted with 185 respondents, but only data from 159 respondents were analyzed. This is because the questionnaire included a filtering question regarding the use of the e-Kosova platform. The 26 respondents who declared that they had never used this platform were skipped to the end of the survey.

To understand the respondents' previous experience with government e-services related to food/agriculture, we asked the question: Have you previously used any other government electronic service related to food/agriculture?

Out of the 159 respondents, 23% had previous experience with online government systems, 23% were unsure if they had ever used one, and 54% had not received any government service through the Internet before using the e-Kosova platform. (Figure 6)

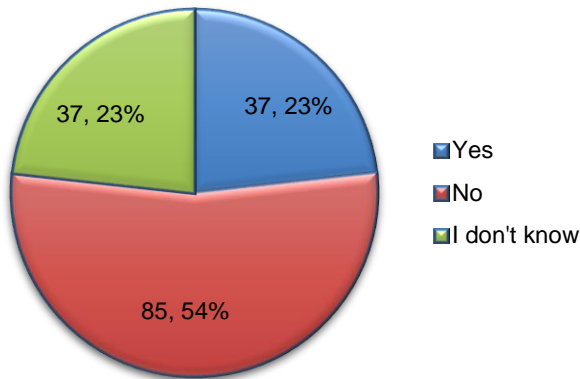


Figure 6. Have you previously used any other government electronic service related to food/agriculture?

The reliability of the questionnaire: Compared to the critical value of 0.70, the reliability statistics (Table 1) with a Cronbach's Alpha value of 0.938 indicate a high level of consistency and reliability of the questionnaire, suggesting that the questionnaire is well-constructed.

Table 1. Reliability Statistics

Cronbach's Alpha	N of Items
.938	31

To address the research question and assess the validity of the hypotheses, we conducted a descriptive statistical analysis, independent samples t-test, as well as a linear regression.

The findings of the descriptive statistical analysis were used to assess the readiness of the food and agriculture sector to use government electronic systems, through the e-Kosova portal, as expressed in question Q1.

Based on the results of the Descriptive Statistics (Table 2) for the construct "Intention to use," the lowest readiness score to use the system is 2.75, while the highest score is 5.00 on the 5-point Likert scale. This indicates that the average Intention to use e-government systems through the e-Kosova portal is 4.1851, with a standard deviation of 0.57632.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Intention to Use	159	2.75	5.00	4.1851	.57632
Valid N (listwise)	159				

Regarding question Q1: How strong is the readiness of the food and agriculture sector to use e-government electronic systems, through the e-Kosova portal?

The results indicate that: Overall, respondents have expressed a strong readiness (with an average above 4 on the 5-point scale) to use the e-government systems presented in the e-Kosova portal in the food and agriculture sector. This result suggests that businesses in

this sector have a positive inclination toward using electronic government systems to improve their operations and relationships with the government.

Based on the independent samples t-test ($df=120$, $t=0.452 < 1.980$ =Critical Value, confidence level=0.05), there is no statistically significant difference between the respondents who have previously used electronic systems and those who have received government services in the traditional form, regarding Intention to Use. This is because there is insufficient statistical evidence to support a significant difference between the two groups in this context.

Linear regression has been used to test the relationship and impact of factors on the Intention to use the e-Kosova platform to obtain e-F/A services.

The results of the linear regression analysis (Table 3) show that Perceived Usefulness, Perceived Trialability, Perceived Observability, and Perceived Trustworthiness have a significant impact on the readiness of respondents to use the electronic services provided by the government for the food and agriculture sector. However, for the other three variables, Perceived Ease of Use, Perceived Compatibility, and Perceived Image, there is insufficient evidence to confirm their influence on the readiness to use (ITU)

Table 3. Correlation matrix

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.598	.317		1.883	.062
Perceived Usefulness	.346	.084	.327	4.125	.000
Perceived Ease of Use	.045	.076	.049	.597	.551
Perceived Compatibility	.036	.079	.040	.451	.653
Perceived Trialability	.113	.062	.123	1.807	.048
Perceived Observability	.247	.088	.245	2.806	.006
Perceived Image	-.057	.047	-.088	-1.232	.220
Perceived Trustworthiness	.158	.069	.175	2.310	.022

a. Dependent Variable: Intention to Use

Based on Table 3, we can discuss the confirmation of the hypotheses raised in the study.

H1: Perceived Usefulness has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

Perceived Usefulness: The results confirm hypothesis H1, showing that Perceived Usefulness has a statistically significant positive effect on the Intention to Use e-Kosova to obtain e-F/A Services (Beta = 0.327, $t = 4.125$, sig. = $0.00 < 0.05$). This means that the higher the perceived usefulness of e-Kosova by the users, the higher the level of intention to use it.

H2: Perceived Ease of Use has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

Perceived Ease of Use: The results do not confirm hypothesis H2, indicating that Perceived Ease of Use does not have a statistically significant impact on the Intention to Use e-Kosova to obtain e-F/A Services (Beta = 0.049, $t = 0.597$, sig. = $0.551 > 0.05$). This indicates that the difficulty of using e-Kosova does not have a significant impact on the level of Intention to Use.

H3: Perceived Compatibility has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

Perceived Compatibility: The results do not confirm hypothesis H3, indicating that Perceived Compatibility does not have a statistically significant impact on the Intention to Use of e-Kosova to obtain e-F/A Services (Beta = 0.04, $t = 0.451$, sig. = $0.653 > 0.05$). This means that the interaction and compatibility of e-Kosova with norms, past experiences, and the needs of potential adopters do not have a significant influence on the Intention to Use.

H4: Perceived Trialability has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

Perceived Trialability has a positive and statistically significant impact on the Intention to Use of e-Kosova to obtain e-F/A Services (Beta = 0.123, $t = 1.807$, sig. = $0.048 < 0.05$). These results indicate that prior experimentation with the platform has a significant influence on the Intention to use e-Kosova.

H5: Perceived Observability has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

Perceived Observability has a positive and statistically significant impact on the Intention to Use of e-Kosova to obtain e-F/A Services (Beta = 0.245, $t = 2.806$, sig. = $0.006 < 0.05$). The results indicate that the perception of observability has a significant influence on the readiness to use e-Kosova. Therefore, the fact that users will not have difficulty describing and presenting the platform to their colleagues and family members shows that they will be more likely to decide to use it in the future.

H6: Perceived Image has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

Perceived Image does not have a statistically significant impact on the Intention to Use of e-Kosova to obtain e-F/A Services (Beta = -0.088, $t = -1.232$, sig. = $0.220 > 0.05$). These results indicate that the perception of image does not have a significant influence on the readiness to use e-Kosova.

H7: Perceived Trustworthiness has a positive effect on the Intention to Use e-Kosova for accessing e-F/A services.

Perceived Trustworthiness has a positive and statistically significant impact on the Intention to Use of e-Kosova to obtain e-F/A Services (Beta = 0.175, $t = 2.310$, sig. = $0.022 < 0.05$). These results indicate that the perception of trustworthiness has a significant influence on the readiness to use e-Kosova. If a user perceives that the system operates with acceptable consequences for them and does not pose a threat to security and privacy, they are more likely to adopt it.

The results presented in Table 4 "Model Summary" of the regression show a positive moderated relationship ($R=0.692$) between the predictor variables and the dependent variable "Intention to Use." The predictor variables included in the model have a significant impact on explaining the variability of "Intention to Use" (R Square = 0.478). They can explain 47.8% of the variability in "Intention to Use." However, it is important to note that the model does not fully explain the variability, leaving a portion of the explanation that may be influenced by other factors not included in the model. The Std. Error of the Estimate, which is 0.42587, represents an acceptable level of model error.

Table 4. Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.692 ^a	.478	.454	.42587

a. Predictors: (Constant), Perceived Trustworthiness, Perceived Trialability, Perceived Image, Perceived Usefulness, Perceived Ease of Use, Perceived Observability, Perceived Compatibility

4. Conclusions

The use of e-Government in the food and agriculture sector has significant benefits and is in line with global developments. However, to achieve successful results, it is important for these systems to be used by a larger number of users and to address the factors that influence their readiness to adopt and use these services.

In response to this, this study examines the readiness of the food and agriculture sector to use government electronic services and identifies some of the factors that may influence the acceptance and use of these systems, focusing on the context of the Republic of Kosovo.

The results show that representatives of these sectors have a strong readiness to use e-Gov systems, and factors such as Perceived Usefulness, Perceived Trialability, Perceived Observability, and Perceived Trustworthiness have a significant impact on this readiness.

The findings of this study provide a significant contribution to the literature and practice in the field of e-governance, specifically in the food and agriculture sector. They demonstrate that to encourage the acceptance and use of these services, it is important to offer services that are perceived as useful. Additionally, factors such as system testing, visibility of results, and trustworthiness are important for the adoption and acceptance of these services.

Governments and institutions responsible for implementing e-governance in the food and agriculture sector can consider the findings of this study to improve their strategies and policies in this direction. Encouraging the adoption of electronic government systems and increasing their usage will bring significant benefits in terms of efficiency and quality of public administration in these important sectors of the economy, as well as sustainable development of the country.

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