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CONTENTS

THE THEORETICAL FOUNDATIONS OF APPLYING TAX INCENTIVES FOR INVESTMENTS DIRECTED TOWARD HUMAN CAPITAL	14
Quliyev Begimqul Melikovich	
ECONOMETRIC MODELS OF CASHLESS SETTLEMENTS AMONG ECONOMIC ENTITIES.....	21
Ruzimuradov Shukhrat Khusanovich	
PROSPECTS FOR THE DEVELOPMENT OF TOURISM BRAND MARKETING IN MODERN CONDITIONS (UAE: DUBAI ON THE EXAMPLE OF A CITY).....	26
Ibodova Dilsora Ibodovna	
CREDIT DEFAULT SWAPS AS A WAY TO HEDGE AGAINST FORTHCOMING FUTURE UNCERTAINTIES IN THE DEBT MARKET OF UZBEKISTAN	31
Abduganiev Abdulaziz Alisher o'g'li	
SHOULD THE REGULATION OF THE E-COMMERCE MARKET IN THE REPUBLIC OF UZBEKISTAN BE CARRIED OUT BY THE NATIONAL AGENCY FOR PERSPECTIVE PROJECTS OR THE CENTRAL BANK?	39
Sadikov Aziz Mirsharapovich	
MECHANISM FOR IMPLEMENTING ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN THE OPERATIONS OF COMMERCIAL BANKS IN UZBEKISTAN.....	46
Bakhriddin Berdiyarov	
INNOVATIVE APPROACHES OF SMALL BUSINESSES IN THE INDUSTRY AND CONSTRUCTION SECTORS AND THEIR IMPACT ON EMPLOYMENT.....	53
Ergasheva Nigora Abdigapparovna	
AI-BASED NORMALIZATION METHODOLOGY FOR COLLECTING AND PROCESSING KPI INDICATORS.....	56
Shuhratov Mamurjon Shuhrat o'g'li	
REFORMS AND PROSPECTS FOR THE DEVELOPMENT OF THE PARTICIPATORY BUDGETING INITIATIVE IN UZBEKISTAN	63
Khamidov Khabibullo Hikmatulla ugli	
PROBLEMS OF THE INWARD PROCESSING CUSTOMS REGIME AND WAYS TO ELIMINATE THEM.....	70
Abdullaev Shakhzodbek	
FINANCIAL ANALYSIS OF SMALL BUSINESS AND PRIVATE ENTREPRENEURSHIP IN CONSTRUCTION	74
Musayeva Shoirazimovna	
MEASURES TO ENHANCE THE ROLE AND EFFECTIVENESS OF SMALL BUSINESS IN REGIONAL ECONOMIC DEVELOPMENT.....	80
Ergashev Jamshid Jamoliddinovich	
THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR IMPLEMENTING INNOVATIVE TECHNOLOGIES IN EDUCATION.....	84
Alijonova Marjonabonu Jaxongir qizi	
INDIA'S EXPERIENCE IN ENHANCING PUBLIC WELFARE THROUGH THE DEVELOPMENT OF ENTREPRENEURIAL ACTIVITY	88
Aripov Oybek Abdullayevich	
GREEN STRUCTURAL TRANSFORMATION IN UZBEKISTAN: GREEN FINANCE AND ECO-INNOVATION FOR SUSTAINABLE INDUSTRIAL AND AGRICULTURAL DEVELOPMENT.....	93
Egamberdiev Khumoyun	
AGRICULTURAL MANAGEMENT BASED ON INNOVATIVE TECHNOLOGIES AT THE INTERNATIONAL LEVEL: THE EXAMPLE OF UZBEKISTAN.....	101
Bustonov Komiljon Kumakovich	
ANALYSIS OF THE FINANCIAL CONDITION OF ENTERPRISES: ASSESSMENT OF EQUITY EFFICIENCY	110
Umurkul Shukhratovich Fayziev	

IMPROVING THE QUALITY OF ECONOMIC GROWTH THROUGH THE TRANSITION TO THE DIGITAL ECONOMY.....	118
Mamadaliyev Akmaljon	
МЕТОДЫ И МЕХАНИЗМЫ ИССЛЕДОВАНИЯ ПОТРЕБИТЕЛЬСКОГО ПОВЕДЕНИЯ НА ТУРИСТСКОМ РЫНКЕ.....	124
Нурматова Ситора Шавкатовна	
ANALYSIS OF INNOVATION ACTIVITIES.....	133
Alieva Elnara Ametovna	
METHODS AND MECHANISMS FOR STUDYING CONSUMER BEHAVIOR IN THE TOURISM MARKET.....	139
Nurmatova Sitora Shavkatovna	
ALGORITHMS AND METHODS FOR CALCULATING THE AREA OF A GASTRIC ULCER DEFECT USING MODERN MATHEMATICAL TECHNIQUES.....	145
Yusupov Ibrohimbek XXX, Abdusamatova Munira Sultonbek qizi	
UTILIZATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN ENTERPRISE MARKETING ACTIVITIES.....	151
Sadikov Shohrux Shukhratovich	
ENSURING THE FINANCIAL SUSTAINABILITY OF HIGHER EDUCATION INSTITUTIONS: STRATEGIC DIRECTIONS, GLOBAL TRENDS, AND POLICY IMPLICATIONS.....	156
Inomiddin Imomov	
THEORETICAL FOUNDATIONS OF THE STRUCTURE OF THE NATIONAL ECONOMY.....	161
Bustonov Mansurjon Mardonakulovich	
IMPORTANT CHARACTERISTICS OF THE DEVELOPMENT OF E-COMMERCE SERVICES.....	169
Jurakulov Shohruh Bahtiyorovich	
AGRICULTURE PROMOTION AND DEVELOPMENT IN MOUNTAIN AND MOUNTAIN REGIONS.....	173
Abdulxayeva Gulshan Maxmudovna	
IMPROVING MECHANISMS FOR ENHANCING ECONOMIC EFFICIENCY IN SERVICE ENTERPRISES.....	178
Seytimbetov Kabul Serimbetovich	
INTEGRATION OF INTELLIGENT CONTROL IN DRYING SYSTEMS: PROCESS OPTIMIZATION THROUGH SENSORS, ARTIFICIAL INTELLIGENCE, AND MODULAR DRYING.....	184
Yangiboyeva Raxbaroy Mashrabboy qizi	
THEORETICAL MODELS AND CONCEPTS OF ECONOMIC DEVELOPMENT IN THE ENERGY SECTOR.....	190
Nigmatullaeva Gulchekhra Nurullaevna	
STATISTICAL ANALYSIS OF REGIONAL ECONOMIC POTENTIAL (A CASE STUDY OF NAMANGAN REGION).....	196
Tursinbayev Azizbek Nabijon o'g'li, Sirojiddinov Kamoliddin Ikromiddinovich	
DIRECTIONS FOR DEVELOPING INVESTMENT AND EXPORT IN REMOTE SERVICE ENTERPRISES.....	203
Uzakov Ortik Shaymardanovich	
SPECIFIC FEATURES OF ENTREPRENEURSHIP IN INCREASING THE INCOME OF THE POPULATION IN THE REGION.....	207
Kuldasheva Maftuna Musurmon kizi	
KEY FACTORS OF ATTRACTING INVESTMENT THROUGH SUBSIDIES AND INVESTMENTS TO INCREASE AGRICULTURAL CROP PRODUCTION IN UZBEKISTAN.....	211
Mamatkulova Nadira Makkamovna	
RAQAMLI MARKETING VA INNOVATSION TEXNOLOGIYALAR ASOSIDA EKOTIZIM SAMARADORLIGINI OSHIRISH USULLARI.....	216
Sobirov Azizbek Avazbekovich	
WAYS TO IMPROVE THE STATISTICAL ASSESSMENT OF FRUIT AND VEGETABLE PRODUCTION PROCESSES AND EXPORT POTENTIAL IN THE REPUBLIC OF UZBEKISTAN.....	223
Anorboeva Bakhtijamol Daniyar kizi	

THE IMPACT OF DEGRADATION ON THE OPERATIONAL CHARACTERISTICS OF PHOTOVOLTAIC MODULES UNDER SHARPLY CONTINENTAL CLIMATIC CONDITIONS	229
Qurbanov Yunus Murtaza o'g'li	
INTEGRATED NEW MEDIA OPERATION MODEL FOR INTELLIGENT TALENT ASSESSMENT PLATFORMS: THE PATH OF QR CODE ACTIVATION AND CONTENT-DRIVEN ENGAGEMENT.....	235
Wang Biao	
METHODOLOGICAL FOUNDATIONS FOR SHAPING THE CREATIVE ACTIVITY OF YOUNGER PUPILS IN SOLVING MATHEMATICAL PROBLEMS	239
Dzhurakulova Adolat Khalmuratovna	
SOLIDWORKS-BASED MODELING OF AN AIR-BLOWING SYSTEM TO ENSURE HIGH-QUALITY FIBER REMOVAL FROM SAW TEETH	247
Mirzakarimov Mirsharoffiddin Mirzaabdurahimovich	
THEORETICAL STUDY OF TEMPERATURE AND THERMAL PHENOMENA IN MECHANICAL CUTTING OF WHITE CAST IRON.....	256
Allanazarov Akmal Abdulxaqovich	
THEORETICAL AND METHODOLOGICAL FOUNDATIONS OF SUSTAINABLE DEVELOPMENT OF THE REGIONAL ECONOMY	262
Turdiyev Ulug'bek Qayumovich	
THE INTERRELATIONSHIP BETWEEN MIGRATION AND THE INDUSTRIAL ECONOMY	266
Khusanbek Begmatov	
THE IMPACT OF ESG PRINCIPLES ON THE HOTEL INDUSTRY	271
Khusenova Mekhrangiz	
CURRENT STATUS OF INDUSTRIAL PRODUCTION AND SERVICES MARKET IN KASHKADARYA REGION.....	276
Norov Murodjon Makhmudovich	
DEVELOPMENT OF AN ARTIFICIAL INTELLIGENCE-BASED CYBERSECURITY SYSTEM FOR THE AUTOMATIC DETECTION OF FAKE FINANCIAL RECEIPTS, PHISHING URLS, AND MALICIOUS APK FILES	284
Shermatov Axlidin Sharobiddin o'g'li	
WAYS TO INCREASE REVENUES IN COMMERCIAL BANK OPERATIONS	287
Ostonaqulova Gulchehraxon Muhammadyoqub qizi	
РОЛЬ СВОБОДНЫХ ЭКОНОМИЧЕСКИХ ЗОН В РЕГИОНАЛЬНОМ РАЗВИТИИ И ЗАРУБЕЖНЫЙ ОПЫТ	301
Файзиева Ширин Шодмоновна	
RAQAMLI IQTISODIYOTGA O'TISH SHAROITIDA IQTISODIY O'SISH OMILLARINING TA'SIRINI BAHOLASH METODOLOGIYASI.....	307
Bustonov Mansurjon Mardonakulovich	
FINTECH TRENDS: NEW TOOLS FOR ATTRACTING FINANCING IN THE CONTEXT OF DIGITAL TRANSFORMATION	313
Madjitova Lolakhon Lazizovna	
CHALLENGES AND PROSPECTS FOR THE DEVELOPMENT OF E-COMMERCE IN UZBEKISTAN.....	317
Toshpulatov Akhror Tukhtamurod ugli	
STRATEGIC DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN UZBEKISTAN	326
Rustamov Foziljon	
TYPES AND MEANS OF ADVERTISING IN THE FIELD OF TOURISM	335
Bahriyeva Zarina Nasimovna	
INTELLECTUALIZATION OF TECHNICAL MEANS FOR CONTROLLING TECHNOLOGICAL REFINING PROCESSES.....	340
Ruziyev Umidjon Abdimajitovich	
NECESSITY OF ENSURING AND INCREASING THE COMPETITIVENESS OF PLACEMENT MEANS	349
Sherkulov Dilshod Jurakulovich	
YASHIL IQTISODIYOT VA MOLIYAVIY INKLYUZIYANING O'ZARO BOG'LIQLIK NAZARIYALARI.....	354
Adashaliyev Baxtiyorjon Valisher o'g'li	

THE IMPORTANCE OF THE AUDIT OF LEASING OPERATIONS ON FARMS OF THE REPUBLIC OF UZBEKISTAN	359
Tursunov Ulugbek Sativoldievich	
METHODOLOGY DEVELOPMENT RETAIL MARKETING AND TRADING SYSTEM.....	365
Makhmatkulov Golibjon Kholmuminovich	
NECESSITY OF ENSURING AND INCREASING THE COMPETITIVENESS OF PLACEMENT MEANS	369
Sherkulov Dilshod Jurakulovich	
ENVIRONMENTAL FISCAL POLICY AS A DRIVER OF GREEN GROWTH AND EMPLOYMENT IN CENTRAL ASIA: EMPIRICAL EVIDENCE	374
Rakhmatova Zilola Yurevna	
ON THE ISSUE OF CALCULATING THE POWER REQUIRED TO HEAT THE EDGES OF THE PIPE BILLET TO THE WELDING TEMPERATURE.....	379
Zairkulov Elyor Yoqubjon o'g'li	
STATISTICAL ASSESSMENT OF REGIONAL ELECTRICITY GENERATION VOLUMES.....	385
Doliev Shokhabbos Kulmurat ugli	
ANALYSIS OF ICT APPLICATION IN UZBEKISTAN'S TOURISM BASED ON EMPIRICAL RESEARCH.....	389
Nazarov Khusanbek Avazbek ogli	
METHODOLOGY FOR FORECASTING AND ANALYZING MANAGEMENT ACCOUNTING INDICATORS AT AN ENTERPRISE.....	395
Minutdinova Liliya Tagirovna	
WELLNESS TOURISM AS AN ESSENTIAL COMPONENT OF HEALTH TOURISM.....	402
Tashtayeva Saida Kahharovna	
THE EXPERIENCE OF GERMANY IN DEVELOPING SMALL AND MEDIUM ENTERPRISES.....	409
Annaklichev Saxi Saparmuxamedovich	
ANALYSIS OF THE APPLICATION OF THE INTERNATIONAL STANDARD ON AUDITING "ANALYTICAL PROCEDURES" IN NATIONAL AUDIT ACTIVITIES	416
Tajekeev Ziyatdin Kobeyzinovich	
ORGANIZATIONAL AND ECONOMIC FOUNDATIONS OF GREEN ENTERPRISE DEVELOPMENT IN ENSURING REGIONAL ENVIRONMENTAL SAFETY	421
Khamidillo Odilov	
A REALIST-POSITIVIST FRAMEWORK FOR ANALYSING MERGERS AND ACQUISITIONS UNDER ECONOMIC POLICY UNCERTAINTY	429
Zakhidov Azizbek Rustamovich	
DEVELOPING MATHEMATICAL MODELS TO SIMULATE THE DYNAMIC BEHAVIOR OF SEPARATION PROCESSES, CONSIDERING THE IMPACT OF EXTERNAL FACTORS	436
Abdulleva Kamola Rustamovna	
THEORETICAL FOUNDATIONS OF IMPLEMENTING DIGITAL TECHNOLOGIES IN THE TRANSFORMATION OF BANKS.....	445
Umarova Malika Baxtiyarovna	
ON THE ISSUE OF RESEARCH AND DEVELOPMENT OF A SLAG-FORMING BASE FOR ELECTRODE COATINGS FOR WEAR-RESISTANT SURFACING.....	451
Sadikov Jaxongir Nasidjanovich	
MODELING OF HEAT FLOWS IN GAS-FIRED CHAMBER FURNACES.....	456
Rajabov Azamat Toirovich	
DEVELOPMENT OF A MIMO MODEL OF AZEOTROPIC DISTILLATION	462
Shamsutdinova Vinera Khafizovna	
THEORETICAL FOUNDATIONS OF THE INTERACTION OF A COTTON TUFT WITH A SCREW CONVEYOR AND A MESH SURFACE.....	468
Matyaqubova Jumagul Bakhtiyarovna	
FORECASTING LIQUIDITY AND SOLVENCY INDICATORS BASED ON ARTIFICIAL INTELLIGENCE	473
Zaynutdinov Ismoil Samariddin o'g'li	
MODELS FOR PREDICTING THE MANAGEMENT OF COMPLEX TECHNOLOGICAL PROCESSES AND PRODUCTIONS	477
Gulyamov Shukhrat Mannapovich	

WAYS TO ADJUST LAND RESOURCE USE MECHANISMS FOR FARMERS BASED ON THE EXPERIENCE OF FOREIGN COUNTRIES.....	482
Akhmatov Abutolibkhon Ochilkhon oglu	
STATE SUPPORT MECHANISMS FOR THE DEVELOPMENT OF THE MACHINE-BUILDING INDUSTRY	487
Xursandov Komiljon Makhmatkulovich	
EMPIRICAL ANALYSIS OF TOURISM FLOW FORECASTING IN CENTRAL ASIA BASED REGRESSION MODELS	491
Suratova Mokhirakhon Shavkat Kizi	
THE ROLE OF LOANS IN THE DEVELOPMENT OF THE REGIONAL ECONOMY.....	498
Meylikov Fazliddin Abduhalim o'g'li, Valiev Oybek Shukhrat ugli	
PROPAGATION OF SMALL MOTIONS IN A TWO-LAYER DISPERSE MEDIA FLOW.....	503
D. S. Yakhshibaev	
FURTHER IMPROVEMENT OF THE AUTOMATION SYSTEM OF ELECTRONIC SERVICES AND TOURIST PERMITS.....	511
Najmiddinov Sultan Nurali ugli	

FURTHER IMPROVEMENT OF THE AUTOMATION SYSTEM OF ELECTRONIC SERVICES AND TOURIST PERMITS



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Abstract: This article analyzes the current state of electronic services and automation of tourist permits in the tourism sector, as well as existing challenges and areas for further improvement. In the context of digital transformation, the electronic transfer of government services, particularly in the tourism sector, is of great importance, simplifying permit issuance processes, ensuring transparency, and improving service quality. The study highlights best international practices, the potential of using artificial intelligence, big data, and blockchain technologies, and develops practical proposals for Uzbekistan's conditions.

Key words: electronic services, tourist permit, automation, digital tourism, e-gov, Smart Tourism.

Annotatsiya: Mazkur maqolada turizm sohasida elektron xizmatlar va turistik ruxsatnomalarni avtomatlashtirish tizimining hozirgi holati, mavjud muammolari hamda uni yanada takomillashtirish yo'nalishlari tahlil etilgan. Raqamli transformatsiya sharoitida davlat xizmatlarini elektron shaklga o'tkazish, ayniqsa turizm sohasida ruxsat berish jarayonlarini soddalashtirish, shaffoflikni ta'minlash va xizmatlar sifatini oshirish muhim ahamiyat kasb etmoqda. Tadqiqot davomida ilg'or xorijiy tajribalar, sun'iy intellekt, Big Data va blokcheyn texnologiyalaridan foydalanish imkoniyatlari yoritilgan hamda O'zbekiston sharoitida amaliy takliflar ishlab chiqilgan.

Kalit so'zlar: elektron xizmatlar, sayyohlik ruxsatnomasi, avtomatlashtirish, raqamli turizm, egov, Smart Tourism.

Аннотация: В данной статье анализируется текущее состояние электронных услуг и автоматизации туристических разрешений в туристическом секторе, существующие проблемы и области для дальнейшего совершенствования. В контексте цифровой трансформации электронная передача государственных услуг, особенно в туристическом секторе, имеет большое значение, упрощая процессы выдачи разрешений, обеспечивая прозрачность и повышая качество услуг. В исследовании освещается передовой зарубежный опыт, возможности использования технологий искусственного интеллекта, больших данных и блокчейна, а также разрабатываются практические предложения для условий Узбекистана.

Ключевые слова: электронные услуги, туристическое разрешение, автоматизация, цифровой туризм, электронное правительство, интеллектуальный туризм.

INTRODUCTION

In today's globalization and digital economy, the tourism industry is one of the fastest growing sectors. The increase in tourist flows, the expansion of the range of services and changes in consumer demand require the introduction of modern digital solutions in the public administration system. In particular, the system of electronic services and automation of permits plays an important role in regulating tourism activities.

The development of the tourism sector in Uzbekistan has been identified as one of the priorities of state policy. In recent years, the simplification of the visa regime, the introduction of electronic visas, online registration and licensing services are important steps in this direction.

REVIEW OF LITERATURE ON THE SUBJECT

The impact of digital transformation in the tourism sector, electronic visas and online permits on tourism competitiveness is scientifically and practically substantiated in UNWTO (World Tourism Organization) and OECD reports. These sources emphasize that automated permit systems create convenience for tourists, reduce costs and optimize the activities of state bodies. However, these studies are more analytical and statistical in nature, and specific models for improving the system are limited [1].

Scientists such as K. Buhalis, M. Gretzel have studied the innovative aspects of digital technologies, smart tourism (Smart Tourism) and electronic services in tourism. Their works focus on issues of digital platforms, data exchange and integration. However, the issue of complex automation of permit and licensing processes in tourism has been little studied as a separate research object[2].

Uzbek scientists have carried out a number of scientific works on issues of electronic government, digitization of public services and tourism development. In particular, the works of A.A. Abdurakhmonov, Sh.Kh. Rakhmonov, B.B. Tursunov analyzed the legal and economic foundations of digitization of public services, institutional mechanisms for the introduction of electronic services[3].

Local studies devoted to the tourism sector (N.Yu. Yusupov, F.M. Kholmurodov, D.R. Saidova) highlighted the importance of digital tourism, electronic marketing, online booking systems and information platforms. At the same time, electronic services have been identified as an important element of tourism infrastructure[4].

The analysis of the literature shows that while foreign studies have addressed the issue of electronic services and automation from the perspective of the state or digital tourism, domestic studies have focused mainly on regulatory, legal and organizational aspects.

Within the framework of this study, the author:

considers the automation of electronic services and permits in the tourism sector as a single digital system; organizes information exchange between government bodies, tour operators and tourists on the basis of an integrated platform;

develops an improvement model aimed at increasing the speed of service provision, transparency and user-friendliness.

In this regard, this study, unlike existing scientific works, is distinguished by its focus on improving the processes of issuing permits in electronic services and tourism based on a practical, systematic and innovative approach.

However, existing local studies address the issue of automation of permitting, licensing and administrative processes in the tourism sector in a more general way, and its technological architecture, integration mechanisms and improvement paths are not sufficiently systematized.

RESEARCH METHODOLOGY

The comparative method was used as one of the main methods in the study. Through this method, electronic services and automated systems for issuing permits in tourism introduced in foreign countries (European Union countries, South Korea, Singapore) were compared with the existing practice in Uzbekistan.

In the process of comparative analysis, such indicators as:

- the number of stages of issuing permits;
- the duration of providing electronic services;
- the level of user participation;
- the state of mutual integration of information systems;

- transparency and control mechanisms were taken as a basis. As a result, it was found that in foreign practice, permit issuance processes are fully digitized, the human factor is minimized, and the service time is reduced. In Uzbek practice, it was determined that, despite the existence of electronic services, some processes still require additional administrative intervention[5].

Systematic analysis method. The process of issuing permits in electronic services and tourism was studied as a holistic system using the systematic analysis method. The interrelationships between government bodies, information systems, the regulatory framework and users were analyzed.

This method identified functional gaps, data duplication and integration problems in the existing automation system. As a result, the need for a single digital platform to increase the efficiency of electronic services was scientifically substantiated.

Analytical and statistical method. The study used the analytical and statistical method to analyze the indicators of the use of electronic services, the dynamics of obtaining online permits and the terms of service provision. Based on official statistical data and sectoral reports, the level of automation and its impact on tourism activities were assessed.

As a result of this method, it was found that in regions where electronic services were introduced, the time for obtaining permits was reduced and administrative costs in the activities of tourism entities were reduced.

Expert assessment method. The expert assessment method studied the opinions of tourism specialists, civil servants and IT experts. On the basis of expert surveys, the advantages and disadvantages of the automated permit system were determined, and practical proposals for its improvement were formulated. Analysis and results. The introduction of electronic services in the tourism sector has been carried out gradually in recent years. In particular, electronic licensing, online permit issuance, and electronic application submission services have been launched.

ANALYSIS AND RESULTS

A comparative analysis of the traditional and electronic permit issuance processes in the tourism sector is presented (Table 1).

Table 1. Comparative analysis of permit issuance processes

Indicators	Traditional method	Electronic method
Submit an application	In paper form	Online
Trial period	10–15 days	3–5 days
The human factor	Up	Partially
Transparency	Low	middle
Control mechanism	Limited	Electron monitoring

The analysis of the diagram shows that:

- the use of electronic services is increasing year by year;
- however, the share of electronic services in relation to the total number of permits still does not have a complete advantage;
- in some regions, the level of use of electronic services remains low.

This situation indicates that the functional capabilities of electronic services are limited and a user-friendly interface has not been sufficiently formed for users (Table 2).

Table 2. Information systems integration level

Systems	Integration status	Problem
Tourism register	Partially	Data update is slow
State services portal	Middle	The systems are not interconnected
Tax and license system	Low	Manual inspections

The table data shows that in order to fully automate electronic services, it is necessary to strengthen the integration between systems.

The findings of this study demonstrate that the ongoing digital transformation of permit issuance in the tourism sector has already produced tangible and largely positive outcomes, while simultaneously revealing clear directions for further improvement. The comparative analysis of traditional and electronic permit issuance processes confirms that the transition to electronic services significantly enhances operational efficiency. The reduction of processing time from 10–15 days to 3–5 days illustrates the practical value of automation in accelerating administrative procedures and improving service delivery for tourism stakeholders.

At the same time, the persistence of the human factor at a partial level indicates that the current electronic system represents an intermediate stage of digital maturity rather than a fully automated model. This can be interpreted positively: the existing framework has already laid a solid technological foundation, and the remaining human involvement creates opportunities for gradual optimization rather than systemic restructuring. Similarly, the shift from low to medium transparency reflects meaningful progress in accountability and monitoring, particularly through the introduction of electronic tracking mechanisms. Although full transparency has not yet been achieved, the presence of digital monitoring tools signals a decisive move toward more open and controllable administrative processes.

The dynamic growth in the use of electronic services over recent years further supports the effectiveness of digital reforms. Increasing adoption rates suggest growing trust among users and improving familiarity with online platforms. However, the fact that electronic services do not yet dominate the total volume of issued

permits highlights structural and regional disparities. In several regions, lower usage levels indicate that digital infrastructure readiness, digital literacy, and interface usability remain uneven. Importantly, this does not undermine the value of electronic services; instead, it emphasizes the need for targeted capacity-building measures and user-centered design improvements to ensure broader and more inclusive adoption.

Another significant outcome of the analysis concerns the limited integration between information systems used by state bodies in the tourism sector. Partial or low integration between tourism registers, state service portals, and tax and licensing systems leads to repeated data requests and manual verification procedures. From a positive perspective, identifying these bottlenecks provides a clear roadmap for policy and technological intervention. Strengthening interoperability between systems would not only reduce administrative burdens but also further minimize the human factor, enhance data accuracy, and improve real-time decision-making.

CONCLUSIONS AND SUGGESTIONS

The results of the analysis and research show that the automation of electronic services and permits in the tourism sector is one of the important directions of the digitalization of public services. Although electronic application submission, online licensing, and permit issuance services have been introduced in recent years, their functional capabilities and level of automation remain insufficient. This situation indicates that the existing digital solutions have not yet fully ensured process efficiency, transparency, and sustainability in the provision of public services in the tourism sector.

The analysis revealed that the persistence of the human factor in permit issuance processes, the low level of integration between information systems, and limited statistical monitoring mechanisms significantly reduce the effectiveness of electronic services. In addition, uneven user-oriented service design and disparities in the level of use of electronic services across regions negatively affect the overall development of the system. As a result, the potential of digital technologies to simplify administrative procedures and reduce institutional barriers is not fully realized.

These circumstances indicate the need to further improve the automation system of electronic services and permits in the tourism sector based on a comprehensive, systematic, and innovative approach. Such an approach should be aimed at eliminating fragmentation, strengthening interdepartmental coordination, and ensuring the continuity of digital processes across all stages of service provision.

Based on the results of the analysis, it is proposed to introduce a single integrated digital platform that covers permit issuance, licensing, and registration services in the tourism sector. This platform should ensure automatic and secure information exchange between the information systems of state bodies, thereby reducing duplication of procedures and increasing the speed and reliability of decision-making processes.

At the same time, special attention should be paid to the full automation of the licensing process. Minimizing the human factor at the stages of application review, verification, and decision-making can significantly reduce service delivery time and lower the risk of corruption. Automated workflows and algorithm-based verification mechanisms would contribute to greater objectivity and consistency in administrative decisions.

Strengthening the integration of information systems is also essential. The practice of requesting duplicate data from applicants should be eliminated by establishing API-based integration between tourism authorities, tax bodies, licensing institutions, and public service portals. This will allow data to be reused efficiently and will reduce the administrative burden on both service providers and users.

In addition, the introduction of statistical monitoring and analytical mechanisms is necessary to improve governance quality. The development of analytical modules that automatically analyze the use of electronic services, permit issuance deadlines, and refusal cases will make it possible to identify bottlenecks in the system, assess performance indicators, and make evidence-based management decisions.

Improving user-oriented service design remains another important direction. Simplifying electronic service interfaces, expanding multilingual support, and increasing opportunities for accessing services through mobile platforms will enhance user satisfaction and ensure broader inclusion of tourism entities across different regions and user groups.

Finally, increasing human resource capacity and developing digital literacy are crucial for the successful implementation of digital reforms. The introduction of regular training programs for civil servants and tourism entities on the effective use of electronic services will help improve institutional readiness, reduce resistance to change, and ensure the sustainable functioning of digital systems.

As a result of implementing the proposed measures, the efficiency of the automation system for electronic services and permits in the tourism sector will increase, service quality will improve, and a convenient and transparent digital environment for tourism activities will be created. Ultimately, this will contribute to enhancing the country's tourism competitiveness and strengthening its position in the global tourism market.

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