

# INTEGRATED E-COMMERCE MANAGEMENT SYSTEM BASED ON THE ERPI INDEX: CONCEPT, METHODOLOGY, AND MANAGEMENT MECHANISMS FOR THE DEVELOPMENT OF E-COMMERCE IN UZBEKISTAN

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## Abstract

The article presents a conceptual model of the integrated ERPI (E-commerce Readiness & Performance Index) focused on improving public administration of e-commerce in Uzbekistan. A key feature of the methodology is a stimulating, incentive-based approach based on supporting and developing entrepreneurs. This approach is based on a humanistic management paradigm that emphasizes the importance of internal motivation, constructive choice, and growth stimulation. ERPI includes an assessment of digital readiness, operational efficiency, and compliance levels, forming mechanisms for positively motivating businesses to engage in official activities and exit the shadow sector. The methodological framework is based on institutional and managerial principles and incentive management methods, as well as international standards for the digital economy. The proposed model ensures the transparency of the digital market, stimulates innovation, improves the quality of government support instruments, and contributes to the sustainable development of e-commerce in Uzbekistan.

**Keywords:** E-commerce, ERPI index, digital economy, e-commerce management, integrated management system, platform model, digital infrastructure, online marketplaces, electronic payment systems, logistics ecosystem, data analytics, digital transformation.

## Annotatsiya

Maqolada O‘zbekistonda elektron tijoratni davlat tomonidan boshqarishni takomillashtirishga yo‘naltirilgan ERPI (E-commerce Readiness & Performance Index) integrallashgan indeksining konseptual modeli taqdim etilgan. Metodikaning asosiy xususiyati tadbirkorlarni qo‘llab-quvvatlash va rivojlantirishga asoslangan yondashuv hisoblanadi. Bunday yondashuv insonparvar boshqaruv paradigmasiga asoslanadi va unda ichki motivatsiya, konstruktiv tanlov hamda o‘shini rag‘batlantirishning muhimligi ta’kidlanadi. ERPI raqamli tayyorgarlik darajasi, operatsion samaradorlik va komplayens ko‘rsatkichlarini baholaydi hamda biznesni rasmiy faoliyatga va yashirin iqtisodiyotidan chiqishga undovchi ijobiy motivatsiya mexanizmlarini shakllantiradi. Metodologik asos institutsional-boshqaruv tamoyillari, rag‘batlantiruvchi boshqaruv usullari hamda xalqaro raqamli iqtisodiyot standartlariga tayanadi. Taklif etilgan model raqamli bozor shaffofligini ta’minlaydi, innovatsiyalarni rag‘batlantiradi, davlat qo‘llab-quvvatlash vositalarining sifatini oshiradi va O‘zbekistonda e-commerce’ning barqaror rivojlanishiga xizmat qiladi.

**Kalit soʻzlar:** e-commerce, ERPI indeksi, raqamli iqtisodiyot, elektron tijoratni boshqarish, integratsiyalashgan boshqaruv tizimi, platforma modeli, raqamli infratuzilma, onlayn bozorlar, elektron toʻlov tizimlari, logistika ekotizimi, maʼlumotlar analitikasi, raqamli transformatsiya.

### **Аннотация**

В статье представлена концептуальная модель интегрированного индекса ERPI (E-commerce Readiness & Performance Index), ориентированная на совершенствование государственного управления электронной коммерцией в Узбекистане. Ключевой особенностью методики является стимулирующий, поощрительный подход, основанный на поддержке и развитии предпринимателей. Такой подход основан на гуманистической управленческой парадигме, где подчёркивается важность внутренней мотивации, конструктивного выбора и стимулирования роста. ERPI включает оценку цифровой готовности, операционной эффективности и уровня комплаенса, формируя механизмы позитивной мотивации бизнеса к официальной деятельности и выходу из теневого сектора. Методологическая основа опирается на институционально-управленческие принципы и поощрительные методы управления, а также на международные стандарты цифровой экономики. Предложенная модель обеспечивает прозрачность цифрового рынка, стимулирует инновации, улучшает качество государственных инструментов поддержки и способствует устойчивому развитию e-commerce в Узбекистане.

**Ключевые слова:** Электронная коммерция, индекс ERPI, цифровая экономика, управление электронной коммерцией, интегрированная система управления, платформенная модель, цифровая инфраструктура, интернет-магазины, электронные платежные системы, логистическая экосистема, аналитика данных, цифровая трансформация.

### **INTRODUCTION**

The development of e-commerce is a key factor in the modernization of the contemporary economy. In emerging market countries, including Uzbekistan, e-commerce is seen as a driver of SME transformation, expansion of export potential, and improvement of government efficiency.

Despite significant progress, systemic barriers remain: a fragmented regulatory framework, insufficient digital maturity of SMEs, weak integration of public and private digital platforms, limited transparency of online transactions, and a significant share of the shadow economy.

Of particular importance is the transition to a stimulating model of public administration, where the focus is on supporting, developing, and encouraging entrepreneurs rather than punishing them. This approach is consistent with the humanistic management paradigm, according to which sustainable change occurs through internal motivation, positive influence, and constructive choice, rather than through fear of sanctions [13; 14].

In this regard, an integrated ERPI index is proposed, which includes incentives for the development of e-business and is aimed at bringing digital commerce out of the shadow sector.

## **METHODOLOGY**

The methodological basis of the study is built on the interdisciplinary integration of modern theories of management, the digital economy, and government regulation. The research relies on a humanistic management approach that emphasizes positive motivation, encouragement, and support as the central drivers of development for both systems and individuals. In this context, incentives are viewed as more effective than punitive measures, while the creation of favorable conditions for growth and the prioritization of development through support rather than pressure constitute the core philosophy of ERPI. This human-centered perspective shapes the conceptual foundations reflected in prior studies.

The institutional-managerial approach serves as an analytical tool for examining the interaction between government agencies, digital platforms, and business entities. It provides the basis for assessing the systemic nature of public administration and identifying institutional components that require modernization. Complementing this is the concept of digital transformation in management, which forms the basis for developing indicators of digital readiness and the operational efficiency of e-commerce entities. This conceptual layer places special emphasis on the digital maturity of businesses, the condition of digital logistics infrastructure, the overall innovative activity within the sector, and the degree of trust among participants engaged in digital transactions.

A central element of the methodology is the index assessment method, through which a comprehensive ERPI index has been developed incorporating three integral blocks: Readiness, Operations & Performance, and Compliance & Trust. Each component is normalized on a scale of zero to one hundred, enabling the formation of a unified aggregate indicator that reflects the level of digital sustainability. The methodology further integrates an automated interagency monitoring system grounded in the use of data continuously collected from tax authorities, payment providers, logistics operators, marketplaces, and social registers. The use of automated data sources ensures the objectivity, reliability, and uninterrupted nature of the calculations.

Finally, the methodological framework incorporates the management synergy method, which conceptualizes ERPI as an integral part of a broader government management system. Within this system, synergy emerges through the alignment of incentive-based policies such as grants and subsidies, monitoring and control mechanisms, and digital support tools designed to assist entrepreneurs. Together, these interconnected approaches ensure the systemic, data-driven, and innovation-oriented character of the research methodology.

## **ANALYSIS AND RESULTS**

ERPI functions as a comprehensive tool for assessing digital business maturity and shaping an incentive-based public administration model. It determines the level of

digital development by evaluating infrastructure, operational efficiency, and management transparency, while forming a governance approach built on rewards rather than penalties. Within this framework, development and innovation are stimulated through increased scores that reflect digital progress, and companies with high ERPI results become eligible for various benefits and subsidies. The model also creates favorable conditions for official economic activity, encouraging enterprises to transition out of the shadow economy, and supports a humanistic management philosophy in which growth is achieved through support and positive motivation. As a result, this approach provides a holistic understanding of the status and dynamics of digital business.

A mechanism for integrating ERPI into national government systems has been established, and the proposed model operates without the need for new infrastructure because it relies on the existing Sustainability Rating. This ensures the minimization of administrative barriers, the reduction of transaction costs, accessibility for micro and small businesses, and a high degree of reproducibility and scalability. The system therefore enables broad implementation across different categories of enterprises while maintaining administrative efficiency.

A structured set of state support tools tied to ERPI levels has also been developed. Four incentive tiers define differentiated support measures: high ERPI levels grant priority access to loans, subsidies, and export programs; medium ERPI levels provide advantages in logistics, training, and marketplace promotion; low ERPI values are accompanied by digital adaptation programs; and critically low ERPI scores require participation in mandatory digital transformation programs. Through this mechanism, ERPI effectively becomes a regulator of business behavior, motivating companies to improve their digital maturity and enhance the quality of their services.

The management effects associated with implementing this model have likewise been identified. The introduction of ERPI contributes to greater market transparency and a decrease in shadow operations, while also improving the quality of digital services through continuous monitoring of reviews, return rates, and logistics performance. The index accelerates export activity by facilitating integration into international e-commerce value chains and strengthens consumer confidence by incorporating compliance indicators into assessments. Moreover, it enables the more rational allocation of public resources by directing them toward the most promising enterprises and increases the efficiency of public administration by providing authorities with analytical and forecasting tools for interpreting market trends.

### *Discussion*

The ERPI model allows for the creation of a new level of state management of e-commerce, moving from fragmented regulation to systematic, analytical, and incentive-based management.

First, ERPI acts as a strategic management tool, allowing the state to form long-term e-commerce development trajectories focused on economic growth, increased exports, and support for innovation. The incentive nature of the methodology—

increased points for development, innovation, and transparency—creates a sustainable motivation for entrepreneurs to undergo digital transformation.

Second, ERPI creates a manageable digital environment where business performance criteria become quantifiable and transparent to all market participants. This is in line with modern requirements for evidence-based policymaking [1], [12], ensuring that decisions are made based on data rather than subjective assessments.

Third, the ERPI model strengthens the interaction between the state and the private sector. Through a system of incentives, benefits, subsidies, and access to digital services, an ecosystem is created in which digital platforms, entrepreneurs, logistics companies, and banks are interested in the joint growth of digital maturity.

Fourth, ERPI helps reduce institutional risks and build trust. The corrective indicators in the model serve a purely regulatory, rather than punitive, function, which supports fair competition and protects consumers. This is especially important in the context of rapid growth in distance selling and the expansion of digital markets.

Fifth, the incentive nature of ERPI creates economic advantages for formal activities, motivating businesses to leave the shadow economy. Companies with high index scores gain access to government support programs, subsidies, and improved digital services, making the legal sector more profitable than the shadow economy.

Thus, ERPI becomes the foundation for the formation of a national digital governance system based on encouragement, motivation, and support. The model ensures the sustainable development of e-commerce, strengthens institutions of trust, and increases the competitiveness of Uzbekistan's economy in the context of digital transformation.

## CONCLUSION AND SUGGESTIONS

The proposed ERPI model is an effective tool for assessing the digital maturity of businesses and creates an incentive-based format for government management of e-commerce. The methodology is based on encouraging development, innovation, and transparency, providing enterprises with high ERPI with access to benefits, subsidies, and digital services. This creates economically advantageous conditions for official activities and motivates businesses to leave the shadow economy.

The integration of ERPI into government digital systems enhances transparency, reduces institutional risks, and improves the quality of management decisions. As a result, ERPI becomes the foundation of a new e-commerce management model focused on the development, trust, and sustainable growth of Uzbekistan's digital economy.

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