

Methods and Criteria for Assessing the Effectiveness of Economic Digitalization

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Abstract. This article thoroughly examines the main methods for assessing the efficiency and overall effectiveness of digital transformation from the specific perspective of its wide-ranging social consequences. This study examines various methods of government regulation of economic digitalization based on the strict criteria of technological consequences in the social sphere and systematically classifies them into structured analytical frameworks. The efficiency criteria for government regulation of economic digitalization are further specified in terms of their direct, long-term impact on public welfare, digital inclusion, and social equity. Based on the results of this comprehensive study, key methodological recommendations are proposed for the strategic development and implementation of future government socioeconomic policy, taking into full account the rapidly evolving digital context. Furthermore, the paper highlights the importance of balancing technological advancement with workforce adaptation and data privacy protection. Ultimately, these findings offer a solid theoretical foundation and practical guidelines for policymakers to minimize the digital divide while maximizing the socio-economic benefits of digitalization for the entire society.

Keywords: digital transformation, government regulation, effectiveness assessment, humanistic approach, assessment criteria, quality of life.

Introduction

In some countries, economic digitalization processes occur naturally but require government intervention, while in others, they are driven by government regulators and require the participation of government bodies. This necessitates a rethinking of the economic essence and methods of government regulation and a revision of their classification, as the current classification is insufficient to accurately reflect the differences between methods of government regulation of the economy in the context of digitalization, and it fails to take into account the social consequences of the application of government regulation methods.

The aim of the article is to study the main methods for assessing the effectiveness of digital transformation from the perspective of its consequences for the social sphere and to develop recommendations for improving state socio-economic policy.

Research Results

The differences between the methods of implementing state economic policy, identified by the criterion of quality of life aspects, in which the technological consequences of the application of these methods in the social sphere are manifested, have been studied in the works of such researchers as Z. Bu, J. Liu, S. Zhang [1], M. Garcia-Murillo, I. McInnes [2], Yu. Li, H. Xu, H. Li, Yu. Xu [3], Zi Xu, Zi Liu and H. Luo [4], J. Yin, S. Ibrahim, N.N.A. Mohd, K. Zhong, K. Mao [5], and our studies [6], [7].

A review of the cited sources allowed us to conclude that without covering the social aspects of its implementation, state economic policy can create threats to public well-being, and digitalization brings significant changes to state economic policy, which must be taken into account when developing its methodological support.

Firstly, the digitalization of social support measures is implemented differently in each area of state economic policy. Therefore, the selection of appropriate methods for implementing this policy must be guided by the technological support for these methods, which largely determines their impact

on society. Given this, it is necessary to develop an additional criterion for classifying methods of state regulation of economic digitalization: aspects of quality of life that manifest the technological consequences of applying these methods in the social sphere.

Secondly, the impact of economic digitalization on the social environment can differ fundamentally depending on society's readiness for technological change and its alignment with current societal needs. Therefore, when determining methods for implementing state economic policy, it is important to consider how well technological transformations in economic activity align with public sentiment. In this regard, another additional criterion for classifying methods of state regulation of economic digitalization is proposed: the nature of technological consequences in the social sphere.

Based on the introduced criteria, the classification of methods of state regulation of the digitalization of the economy, presented in Table 1, has been supplemented.

Table 1

Classification of methods of state regulation of the digitalization of the economy according to the criteria of technological consequences in the social sphere

Classification criterion	Groups of regulatory methods identified according to this criterion	Social consequences
Aspects of quality of life in which the technological consequences of the application of these methods in the social sphere are manifested	methods for increasing happiness in society	– "smart" fight against poverty; – reducing social inequality through digitalization; – digitalization of the labor market; – high-tech development of the "green" economy.
	methods for increasing the attractiveness of regions for living	– digital modernization of territories; – automation of migration regulation; – digital support for tourism.
	methods for improving the economic climate	– development of digital institutions; – transition to an information society.
	methods for developing socially significant sectors of the economy	– digitalization of education; – digitalization of healthcare; – development of telecommunications infrastructure and import substitution of high-tech industries.
The nature of technological consequences in the social sphere	methods that have a positive impact on society	social progress, growth of public welfare;
	methods that negatively impact society	public resonance, widening of the digital divide, decline in quality of life;
	methods that have a neutral impact on society	smooth adaptation of society to the digitalization of the economy.

Source: compiled by the authors.

The polycriterial classification, formed by the addition of new criteria, will allow for a more thorough and rational formation of the methodological apparatus of state economic policy, selecting the most appropriate levers of state influence on the economic system and the processes occurring within it for each aspect of quality of life, with the optimization of technological consequences in the social sphere.

We propose a humanistic methodological approach to assessing the effectiveness of government regulation of economic digitalization, measuring effectiveness in terms of its social impact. This approach ensures a more reliable assessment by taking into account the social component of technological reform. A distinctive feature of the humanistic approach is not the replacement of economic criteria with social ones, but rather their comprehensive consideration by encompassing all levels of the impact of digitalization and its regulation.

The humanistic approach distinguishes between, but comprehensively and equally considers, objective (macro-level, manifested at the level of society and the economy as a whole) and subjective (micro-level, private) criteria. The combination of these criteria informs an interpretation of the effectiveness of government regulation of economic digitalization in terms of its social consequences. The following matrix (Figure 1) has been developed as a scientific and methodological framework for interpreting effectiveness within the humanistic approach.

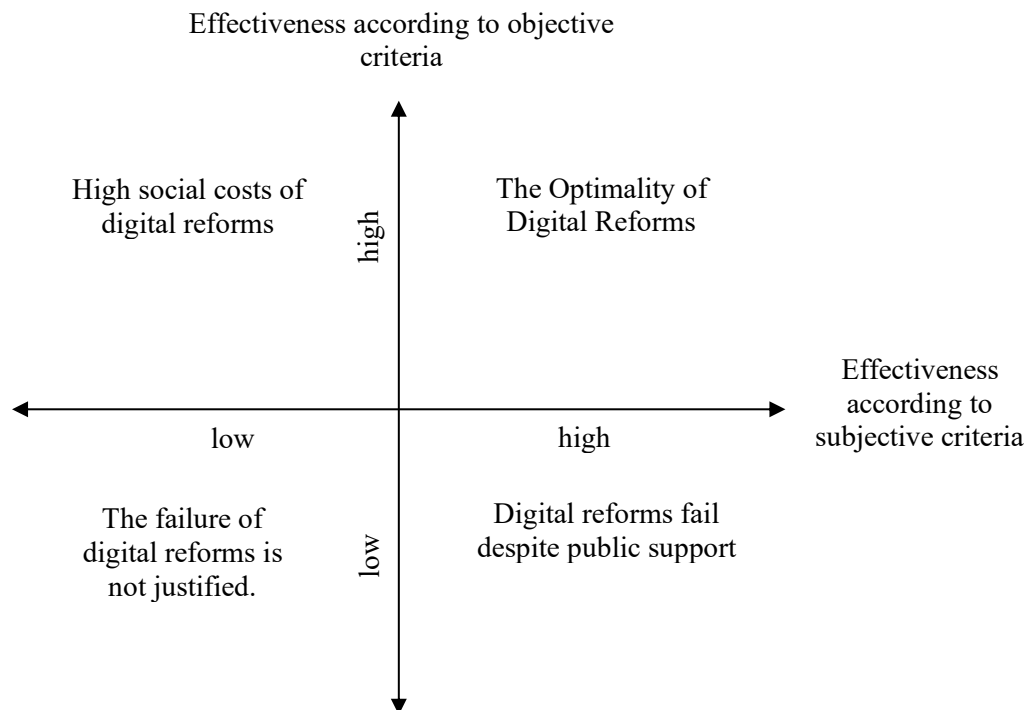


Figure 1. Matrix of interpretation of the systemic effectiveness of state regulation of the digitalization of the economy from the standpoint of consequences for the social sphere in a humanistic approach

Source: compiled by the authors.

As shown in Figure 1, at the intersection of the consequences of the digitalization process for the social sphere, manifested at different levels, four states of the effectiveness of regulating this process emerge within the humanistic approach:

- the optimality of digital reforms, when effectiveness is high according to both objective and subjective criteria;
- high social costs of digital reforms, when effectiveness is high according to objective criteria but low according to subjective criteria;

- failure of digital reforms despite public support, when effectiveness is high according to subjective criteria but low according to objective criteria;
- failure of digital reforms, meaning they are unjustified, when effectiveness is low according to both objective and subjective criteria.

The criteria for the effectiveness of state regulation of economic digitalization from the perspective of consequences for the social sphere, proposed in accordance with the humanistic approach to its assessment, are specified in Table 2. The table clearly identifies the level of each criterion, its socially significant results (the numerator in the effectiveness assessment formula), and the costs of economic digitalization that are tangible for society (the denominator in the effectiveness assessment formula).

Table 2

A set of criteria for the effectiveness of state regulation of the digitalization of the economy from the standpoint of consequences for the social sphere

The level at which social consequences manifest themselves	Criteria for the effectiveness of regulation of the digitalization of the economy	Socially significant results of economic digitalization	Costs of economic digitalization tangible for society
Macro-level: objective criteria of effectiveness	Financial	additional income	growth in household spending
	Ecological	environmental benefits	environmental protection costs
	Reputational	improving ranking positions	downgrade of rating positions
	Industrial	import substitution	deficit
	Institutional	development of institutions	degradation of institutions
Micro-level: subjective criteria of effectiveness	Stratification	inclusiveness of society	social inequality
	Cultural	happiness of society	psychological pressure
	Labor	unlocking labor potential	job dissatisfaction
	Risky	strengthening stability	decreased security
	Migration	improvement of the demographic situation	disproportions in territorial development

Source: compiled by the authors.

The results are additional income: increased productivity and, accordingly, wages, savings in the household budget due to reduced prices on goods sold through e-commerce, as well as due to intelligent support for consumer behavior, ensuring its rationalization (elimination of impulse purchases).

The advantage of assessing the effectiveness of government regulation of economic digitalization is assessed from the standpoint of its consequences for the social sphere using the proposed objective and subjective criteria in a humanistic approach. This is the achievement of a holistic humanitarian

vision of the consequences of digital reforms, while correlating the socially significant results of economic digitalization with the tangible costs it causes for society.

The humanistic approach and its criteria for the effectiveness of digitalization, based on its social impact, are suitable for countries with traditional socioeconomic structures, including the Kyrgyz Republic, which lacked the opportunity to prepare for the Fourth Industrial Revolution in advance and have only recently joined its ranks.

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