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FACTORS INFLUENCING THE USE OF DIGITAL TECHNOLOGIES IN THE ACTIVITIES OF SMALL BUSINESS ENTITIES AND SOLUTIONS TO ADDRESS THEM

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Abstract

This article is dedicated to analyzing the opportunities and challenges of using digital technologies in small business entities. The effectiveness of all digital data in small business is examined. The article highlights the socio-economic advantages of applying digital technologies for small businesses, the barriers encountered in the transition to a digital format, and the methods to overcome them. To study the factors influencing the development of small businesses under digital economy conditions, econometric models have been employed. The results of these analyses allow for forecasting the development trends of small business entities and defining directions for growth.

Keywords: Business Efficiency, Investments, Competitiveness, Analysis and Forecasting, Small Business, Digital Technologies, Digital Transformation.

INTRODUCTION

At present, transforming small business activities into digital technologies is considered a key direction for improving their efficiency. However, for small businesses, implementing these processes is challenging because they often occur separately without using an integrated approach.

The digital transformation mechanism refers to a set of methods and tools for integrating digital technologies into the business processes of small business



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entities and their practical use in daily operations, in line with the current regulatory framework and sustainable development goals.

To understand the essence of specific tasks of digital technology, it is necessary to establish appropriate relationships between the structural elements of this mechanism. In recent years, the problematic issues of forming and developing digital technologies have been the subject of scientific debate among researchers. However, considering the leading role of management in the digital transformation process, it remains crucial to examine individual elements of technology from the perspective of their consistency, balance, and alignment with objectives.

Based on an examination of modern ideas about the state and challenges of small businesses, it is essential to draw the attention of small business leaders to advanced practices in managing the use of digital technologies. Digital technologies can form the foundation of sustainable competitive advantages by reducing costs and improving quality in the implementation of business models. However, the indifference of small business leaders and the lack of funding for transitioning to digital formats and implementing new technologies can hinder their development.

MATERIALS AND METHODS

In the works of CIS scholars such as P. Kirillov, A.V. Babkina, S.D. Bodrunov, O.V. Podsukhina, A.Kh. Mukanov, V.A. Utkina, Ye.V. Emshanova, G.M. Aubakirova, F.M. Isataeva, and A.S. Kuatova, the theoretical and methodological aspects of applying digital technologies to the activities of entrepreneurial entities are discussed.

Similarly, local scholars, including S.S. Ghulomov, R.Kh. Ayupov, O.M. Abdullaev, G.R. Baltabaeva, O.M. Kenjabaev, A.O. Roziyev, A.M. Abduvohidov, T.S. Qoʻchqorov, L.T. Rahmonov, B. Khodiev, M. Qosimova, M. Eshov, Gʻ. Khusainov, U. Gafurov, N. Murodova, S. Salaev, O. Ergashev, M.M. Makhammadiyev, Sh.Sh. Sadikov, D.R. Mamasoatov, Z.T. Mamadiyarov, and others have conducted scientific research on the application and development of digital technologies in the digital economy. In particular, local scholars such as J.Kh. Kambarov and N.J. Makhmudova, in their research, emphasized the



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importance of supporting innovation in setting telecommunication rules for industrial economies and defining technical standards, which, in turn, contributed to the emergence of a new sector of the innovative economy—the digital market. However, despite these insights, the methods for improving the effective use of digital technologies in small business entities remain insufficiently studied.

The State Program for the implementation of the Development Strategy of the Republic of Uzbekistan further notes: "The digital economy, as a major factor of production, using digital data, processing large volumes, and applying the results of analysis, can significantly increase the efficiency of production, technologies, equipment, storage, sales, and the delivery of goods and services compared to traditional management methods."

Based on the above points, it can be concluded that addressing the challenges of improving methods for the effective use of digital technologies in small business entities is of great scientific importance. Such research provides a crucial theoretical and methodological foundation for developing and implementing strategies to enhance the application of digital technologies in small business entities within the national economy.

ANALYSIS AND RESULTS

The introduction and development of digital technologies lead to changes in markets, which inevitably require entrepreneurs to reconsider their business activities and identify new prospects for business development. A theoretical analysis of digital technologies allows identifying the following aspects of this issue:

Searching for new opportunities for already operational enterprises to collaborate more effectively with clients, partners, suppliers, and other stakeholders using digital technologies.

Identifying new fields of activity.

Addressing these issues is critical for small business entities as they play an essential role in any economy, fulfilling significant socio-economic functions.

The digitalization of the economy opens new opportunities and prospects for small businesses. Utilizing digital technologies allows small businesses to



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reduce costs, improve efficiency and competitiveness, and produce new types of products that hold certain positions in the digital goods and services market. Alongside emerging opportunities, new challenges also arise, such as not only seeking investments but also forming new competencies that enable small businesses to operate successfully in the conditions of digital transformation. Additionally, the use of digital technologies intensifies competition, not only among domestic but also external market participants.

Another challenge in applying digital technologies in the small business sector is the lack of statistical data reflecting the extent to which entities in this field are integrated into the digital economy. Many aspects of the digital economy currently pertain to the processes of distribution and exchange of outcomes from small business activities and their connections with the financial sector.[1]

Table 2.6 Key Challenges in Developing Small Businesses Through the Application of Digital Technologies

	Application of Digital Technologies				
No	Problems	Description of problems	Solutions to problems.		
1.	The limitation of financing resources	The financing of the main activities of small businesses is often insufficient, so they turn to debt capital. The allocation of financing sources is impossible due to the lack of digital services	Subsidies from the state; creating conditions for the use of debt funds to utilize digitalization products at low interest rates or in installments, and so on.		
2.	The low level of attractiveness for attracting investments	Potential investors are more interested in large firms with significant long-term experience. Small firms do not evoke serious interest in them and are perceived with less trust	To attract investments, you need to use creative ideas and take a serious approach to developing projects and strategies		
3.	The low qualification of employees	Often, specialists are ready to work in large firms, and sometimes not everyone is even aware of the smaller ones	Active work with graduates who possess information capability		
4.	The low qualification of managers	henomena, a manager who is not ready to take their activities seriously, improve, and develop is unpromising from the perspective of the digital economy. Technologies are often difficult for them, and they are not willing to pursue additional education. The lack of education, and so on.	Instilling financial and digital literacy in the population. Optimizing the education system, introducing a management course for all specialties and directions of universities and colleges.		
5.	The low level of interest in developing the	If the company is already operating, managers are afraid of changes and do not want to use digital technologies due to the	To popularize information tools, conduct advanced training courses and seminars, including remote		



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	enterprise or the absence of it.	risks associated with using new tools, which may ultimately not pay off.	courses. Explain the advantages of using digital services in the activities of all types of enterprises.
6.	It is impossible to carry out scientific and technical research and developments	Due to the limitations associated with the aforementioned problems, enterprises in this field are restricted in conducting scientific and technical research	Use ready-made digital services and products, optimize them under specific conditions with the involvement of specialists. Collaborate with IT companies.
7.	The imperfection of the legislative framework, the tax system.	This slows down development, is often unified, and does not take into account the specific characteristics of small businesses	Develop and implement regulations that take into account the small and specific characteristics of medium-sized businesses, as well as the unique features of the country's regions. Reduce the tax burden for small and medium-sized enterprises, provide tax benefits, and so on.

It allows identifying many obstacles and difficulties in the development of the activities of small business entities, especially in providing them with infrastructural support.

There are five main problematic areas that negatively affect the development of entrepreneurial infrastructure to address these issues: the imperfection of the regulatory and legal framework in the field of entrepreneurship, the complexity of crediting processes for start-up entrepreneurial entities; shortcomings in the business taxation system; the backwardness of the information support system; and problems related to providing entrepreneurship with human resources. A significant part of these problems in the implementation of small business activities is associated with the impact of an improperly designed system of infrastructure support developed to offer entrepreneurs the necessary resources. Infrastructure support is one of the critical factors in the formation and development of small business activities.

The necessity to operate effectively under conditions of intense competition imposes its requirements on the efficiency of the business processes of the enterprise. This approach helps to adequately identify the problems that may arise during the development and implementation of the information support system and to develop an effective strategy for studying them.



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The role of system analysis cannot be overestimated, as its methodology is applied in cases where there is insufficient information about the system or the problematic situation at the initial stage.[2]

Summarizing the study of the works of several authors, the following sequence of stages in the system analysis of solving the problem can be determined:

- 1. Formulation of the problem.
- 2. Determination of objectives, their hierarchy, and interconnection.
- 3. Collection of information.
- 4. Consideration of the influence of external factors.
- 5. Creation of the model in the form of equations, programs, or scripts.
- 6. Assessment of costs.
- 7. Verification of efficiency.

The methods and models of system analysis are selected considering specific conditions and preferences for each stage.

Thus, the experience of enterprises that have implemented a CRM system to automate their processes in small business entities shows that the main difficulties and problems arise in various related areas.

After the implementation of a customer relationship management system, it often proves to be unsuccessful and inefficient in the initial stages, leading many entrepreneurs to the mistaken belief that any CRM system is merely a waste of time and money. In reality, if businesses and their customers were aware in advance of the main problems their peers encounter along the way and how to avoid such difficulties in the initial stages, many risks could be prevented.

The first and, perhaps, primary issue in implementing a CRM system in an enterprise is the reluctance of the company's employees to work with it. Specifically, employees simply do not want any innovations and refuse to 'clutter their minds with nonsense,' believing that the CRM system does not simplify work but rather complicates it. The vast majority of entrepreneurs face this problem. Employees fear that now all their work will be 'in front of management's eyes,' and, as they perceive it, no one will be able to 'do nothing.' In such cases, employees consciously resist and often ignore the demands of their superiors.



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It should be specifically noted that employees of the company who make every effort to work with the new CRM system should be incentivized. The second problem in implementing a CRM system in the enterprise's activities is the improper management of the company's administrative staff.

It will be difficult to convey when the head of the enterprise or the sales department itself does not fully understand why the CRM system was implemented, what new 'technologies' it currently offers in its operations, and what management 'capabilities' it provides.

For managers, the best solution in this case would be a kind of 'internship' at other enterprises that have long implemented a CRM system. It is noteworthy that when there is a clear positive example of how the same system works effectively right before their eyes, any manager will understand all its features and the advantages that they and their department will gain in the future.

Another problem in implementing a CRM system is the lack of rules for its usage. When starting to use any, even the simplest CRM system, each employee encounters a number of questions, problems, and difficulties. If there are only two or three such employees in the enterprise, all issues can easily be resolved with the help of technical staff. However, if employees in a department do not get answers to all their questions, they simply 'abandon' the program and justify it by saying it is difficult to work with. This must be avoided, which is why the enterprise needs to create rules and clear instructions for working with the CRM system. Therefore, a document or file should include solutions to the most common problems, general instructions for completing certain fields in documents, maintaining the client database, and so on.

Currently, in the competitive market environment, every enterprise that ultimately wishes to grow must address the issue of meeting the individual needs of customers and maintaining profitable and long-term relationships with them. The implementation of a CRM system ensures that long-term customer relationships become one of the most important assets of any enterprise, increasing competitive advantages, profitability, maintaining a positive image, eliminating negative publicity, satisfying customer needs, reducing distrust and potential conflicts, stabilizing relationships with at-risk customers, and so on.[3]



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Any small business entity that wants to achieve success must respond effectively and flexibly to changes occurring in the market. It is the customer who determines which products are of high quality and, therefore, which business entity is competitive. The customer is a dynamic force that enables the efficient production of goods without excess stock and losses through their behavior. Therefore, meeting customer needs is considered the primary goal of a successful organization. The method of retaining customers is achieved through customer relationship management.

Turning a customer relationship management strategy into a final result is a very challenging task. It means winning the trust of customers in the struggle at every point of contact and every interaction with them on a daily basis.

ERP technology (system), or enterprise resource planning, is a modular software system designed to integrate the main functional directions of an organization's business processes into a single system. The ERP system often includes core software components, referred to as modules, which focus on key business areas such as finance and accounting, human resource management, production and materials management, customer relationship management (CRM), and supply chain management.

Nevertheless, the implementation of ERP has its own set of advantages and disadvantages

Advantages:

- Long-term cost savings can be achieved through process optimization.
- Provides a unified system that reduces IT costs and end-user training.
- ensures transparency in countless areas of business, such as inventory, which is crucial for meeting customer needs.
- Enables improved reporting and planning due to accurate data.
- Ensures better compliance and data security, as well as improved capabilities for managing data, backups, and user rights.

Disadvantages:

- It may have a high initial cost.
- It may be difficult to implement.



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- Change management is required during and after implementation.

- The main ERP modules may be less complex compared to targeted, standalone software. However, businesses may require additional technologies to better manage specific areas, such as supply chains or customer engagement capabilities.

Problems in implementing ERP in the activities of small business entities and their possible solutions:

- 1. Choosing the wrong system. The decision-making process for ERP systems should be the starting point in the activities of small business entities. These processes and needs must be clearly defined, documented, and fully understood before making a balanced choice from the wide range of ERP systems. Based on this foundation, a more effective discussion can be initiated with the software vendor. The vendor can assist in selecting the most suitable options for the business from the various alternatives available.
- 2. The ERP system is not a system that can easily solve all the problems of an enterprise. The ERP system is worth investing in for the long term, but it should be understood that its implementation requires a lot of effort, labor, and time.
- 3. Not utilizing all functionalities of the software. Modern ERP systems are highly beneficial for companies. The list of features continues to grow and expand. A major mistake made by businesses is not fully utilizing the complete capabilities of the software. The ERP implementation team within the company must thoroughly understand the new system and ask the vendor as many questions as possible. The company team should know how to use the ERP system effectively for their business. The best way to maximize returns on ERP investments is to use all features for all business processes. Unfortunately, less than half of companies fully understand the capabilities of their software. To address this issue, a list of all implemented system functionalities can be created, and the percentage of their usage can be determined. By periodically updating this list, it becomes possible to identify which features are frequently and effectively used. This knowledge catalog can also be utilized for training new employees, writing test scenarios, and assisting with audits, compliance, and reporting requirements.



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4. Lack of leadership and team involvement. As mentioned above, implementing an ERP system requires significant effort and represents major changes for every employee. Resistance to such changes is a common reaction. Strong leadership, building consensus, and involving employees in the selection of the new ERP system can be highly beneficial for the quality of the implementation.5. Not utilizing timely training. Not knowing how to work effectively with the ERP system can lead to decreased productivity and increased distrust among users towards the system. Participating in vendor-led training is usually the best choice, as they have comprehensive knowledge of the software.

6. Resistance to change. Selecting an ERP system provides an opportunity to critically review business processes and identify areas where they can be made more efficient. For instance, the new system may allow for better inventory tracking or create more flexible workflows. It is advisable to continuously monitor innovations during the selection and implementation of the new ERP system.

The above-mentioned problems are common during ERP implementation. The level of complexity may vary depending on the industry in which the business operates. Therefore, it is crucial to involve a team of experienced consultants in the implementation process to ensure a smooth implementation. One of the distinguishing features of an ERP system compared to other systems is its ability to integrate information about the company's operations and provide opportunities to analyze the company's efficiency. A key feature of this system is that it allows business operations to be recorded and their impact on the company's activities to be analyzed immediately based on generated reports. Issues encountered during the implementation of ERP systems include:

- 1) Problems related to the specific characteristics of organizing business processes in enterprises;
- 2) Issues and characteristics associated with the level and style of management in enterprises;
- 3) Problems and characteristics related to the unique aspects of organizational culture in companies;
- 4) Features related to the preparedness level of employees (including management) to work with information systems.



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It should be noted that, in the long term, ERP systems can help businesses improve efficiency, but unsuccessful implementation can have adverse effects, which are not always taken into account. When budgeting, it is essential to consider the financial costs and time commitments of the ERP project team members. To achieve the best results, it is crucial for someone within the company to take responsibility for the project and work closely with the ERP provider. The key to successful ERP implementation is not spending money recklessly on software that may not be usable in the future but rather identifying the necessary parameters in advance and anticipating various errors during the implementation process.[4]

In the process of increasing the share of small businesses in the country's GDP, it is essential to identify the factors involved and influencing this process, as well as their stochastic interrelations and mutual impact levels. This enables the improvement of statistical analysis methods for small business development processes in Uzbekistan, forecasting small business development trends, determining which sectors require attention based on analysis results, creating and evaluating a model of small business development trends, and identifying and selecting directions for business growth.

Taking into account the formation of business indicators based on time series, their analysis involves summarizing the lags, that is, the effects of previous states and current influences.

A linear multiple regression econometric model has the following form:

$$Y = a_0 + a_1 x_1 + a_2 x_2 + \dots + a_n x_n \tag{1}$$

Y - the dependent variable (resulting factor); $X_1, X_2, ..., X_n, X_1, X_2, ..., X_n$ - the independent variables (influencing factors). (2) To determine the unknown parameters $a_0, a_1, a_2, \ldots, a_n$ in the model, the following system of normal equations is constructed.

$$\begin{cases} na_0 + a_1 \sum x_1 + a_2 \sum x_2 + \dots + a_n \sum x_n = \sum y \\ a_0 \sum x_1 + a_1 \sum x_1^2 + a_2 \sum x_1 x_2 + \dots + a_n \sum x_n x_1 = \sum y x_1 \\ \dots \\ a_0 \sum x_n + a_1 \sum x_1 x_n + a_2 \sum x_2 x_n + \dots + a_n \sum x_n^2 = \sum y x_n \end{cases}$$

(2)



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A polynomial multiple regression econometric model has the following form:

$$Y = a_0 * x_1^{a_1} * x_2^{a_2} * \dots * x_n^{a_n}$$
 (3)

Here: Y - the dependent variable; $x_1, x_2, ..., x_n$ - Influencing factors.

(5) If we replace the variables in the model with their natural logarithms, the model takes the following form;

$$\ln(y) = \ln(a_0) + a_1 \ln(x_1) + a_2 \ln(x_2) + \dots + a_n \ln(x_n). \tag{4}$$

(5) In the model. $\ln(y) = y'$, $\ln(a_0) = a_0'$, $\ln(x_1) = x_1'$, $\ln(x_2) = x_2'$,..., $\ln(x_n) = x_n'$ If we make the definitions, then it will take the following form;

$$y' = a'_{0} + a_{1}x'_{1} + a_{2}x'_{2} + \dots + a_{n}x'_{n}.$$

$$\begin{cases}
n\grave{a}_{0} + a_{1}\sum x'_{1} + a_{2}\sum x'_{2} + \dots + a_{n}\sum x'_{n} = \sum y' \\
\grave{a}_{0}\sum x'_{1} + a_{1}\sum x'_{1}^{2} + a_{2}\sum x'_{1}x'_{2} + \dots + a_{n}\sum x'_{1}x'_{n} = \sum x'_{1}y' \\
\dots \\
\grave{a}_{0}\sum x'_{n} + a_{1}\sum x'_{n}x'_{1} + a_{2}\sum x'_{n}x'_{2} + \dots + a_{n}\sum x'_{n} = \sum x'_{n}y'
\end{cases}$$
(6)

If this system of seven (7) normal equations is solved analytically through several mathematical methods, then the unknowns a_0 , a_1 , ..., a_n The values of the parameters will be determined:

Eight factors directly influencing factors. X_1 (The share of business in the agriculture, forestry, and fishery sectors.) va X_2 (The share of business in the industrial sector.), X_3 Unknowns in the model a_0 , a_1 , ..., a_n To determine the parameters, the following system of normal equations is constructed with (the share of business in construction) and X_4 (the share of business in trade), X_5 (The share of business in transportation), X_6 (The share of business in freight turnover), X_7 (The share of business in passenger transportation), X_8 (The share of business in passenger turnover) includes. [5]

Since the data is a time series, when we tested them for stationarity using the ADF Dickey-Fuller test, the presence of a unit root was identified. Therefore, we included lags, i.e., the results from previous years, in the model.

In some of the developed models, the parameters are significant and the model is reliable, but there is autocorrelation present in the model. To check for autocorrelation in the residuals of the model, we use the Durbin-Watson (DW) statistic.: [5]



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$$DW = \frac{\sum_{t=2}^{T} (e_t - e_{t-1})^2}{\sum_{t=1}^{T} e_t^2} = \frac{\sum_{t=2}^{T} e_t^2 + \sum_{t=2}^{T} e_{t-1}^2 - 2\sum_{t=2}^{T} e_t e_{t-1}}{\sum_{t=1}^{T} e_t^2} = \frac{\sum_{t=2}^{T} e_t^2 + \sum_{t=2}^{T} e_t^2}{\sum_{t=1}^{T} e_t^2} = \frac{\sum_{t=2}^{T} e_t e_{t-1}}{\sum_{t=1}^{T} e_t^2} \approx 2(1 - \rho_1),$$

$$(7)$$

Here, ρ_1 – First-order correlation coefficient.

If there is no autocorrelation among the residuals of the outcome variable. DW = 2, In the case of positive autocorrelation DW It tends to zero in positive autocorrelation and tends to 4 in negative autocorrelation.

$$\begin{cases} \rho_1 = 0 \to DW = 2; \\ \rho_1 = 1 \to DW = 0; \\ \rho_1 = -1 \to DW = 4. \end{cases}$$

The calculated DW is compared with the DW in the table.

In some of the developed models, the parameters are significant and the model is reliable, but there is autocorrelation in the models. In the optimal model, the calculated value of the DW statistic is 2.01. This indicates that there is no autocorrelation in the residuals of the outcome variable.

After forming the optimal model, we analyze the third stage, which is the verification stage. The significance of the constructed model is checked (Table 3).

In this case, the value of the determination coefficient being equal to 0.94 indicates that there is a sufficiently strong relationship between the economic indicators in the model.

The actual value of the F-statistic $F_{calculation}$ =148030,7 If the actual value is greater than the value in the table, then the constructed multiple regression econometric model is considered statistically significant or adequate to the process being studied.

We find the table value of the F-statistic. To do this, we use the degrees of freedom $k_1 = m$ and $k_2 = n - m - 1$ and α We calculate the values based on the level of significance. Level of significance $\alpha = 0.05$ and degrees of freedom $k_1 = 4$ va



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 k_2 =21-4-1=16 Based on this, the table value of the F-statistic F_{table}=3,67 if. $F_{calculated} >> F_{table}$ It satisfies the condition, which means that the calculated value of the F-statistic is greater than the value in the table, making it statistically significant and usable for.[8]

As a result of the selected factors, the direct positive factors affecting business development and their lags were identified. Now, we will analyze the indirect factors affecting business development. The indirect factors include six factors: X_1 (share of business in employment), X_2 (share of business in exports), X_3 (share of business in investments), X_4 (share of business in paid services), X_5 (share of business in total services), and X_6 (share of business in imports).[10] As analyzed above, first, we check how the outcome and factor variables behave in the model and examine the correlation between them by testing for multicollinearity. For this, we create their correlation table. We tested the correlation between the models in six different variations, and as a result, it was determined that among these direct influencing factors, X_1 (share of business in employment), X_2 (share of business in exports), X_3 (share of business in investments), and X_6 (share of business in imports) are the most influential factors.

Table 2.7
Correlation Matrix

	Yt	XI	X2	<i>X</i> 3	<i>X6</i>
Yt	1				_
X1	0,993281	1			
X2	0,778739	0,764779	1		
X3	0,967175	0,945529	0,784933	1	
X6	0,939786	0,932157	0,870223	0,939335	1

As seen from Table 2.7, the share of business in employment and the share of business in GDP are strongly correlated. After selecting the key factors, 25 models were developed to examine the correlation between the factors. The data for two of these models are presented in the following table. [9]

Since the data is a time series, we tested it for stationarity using the ADF Dickey-Fuller test, and due to the presence of a unit root, we included lags, i.e., the results from the previous year, in the model. We selected the optimal model from



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the models. After forming the optimal model, we analyze the third stage, which is the verification stage. The significance of the constructed model is checked (Table 2.8).

Table 2.8 The results of the selected optimal model. [6]

Variable	Model coefficients	Standard errors	t-Student statistic	P-value
С	-10,05	1,67	-6,01	0,000
Lnx1	0,53	0,05	10,15	0,000
Lnx2	1,49	0,22	6,80	0,000
Lnx3(t-2)	0,21	0,09	2,22	0,04
X6	0,01	0,01	3,84	0,00
R ² - Coefficient of determination	0,97	The mean value of the dependent variable		10,54
Adjusted R ² - Coefficient of determination	0,96	Standard deviation of the dependent variable The informational model of Akayke. Schwarz's information model Hannan-Quinn criterion		1,57
Standard error of regression	0,06			-47,28
Sum of squared residuals	0,05			-42,55
The value of the maximum likelihood function.	28,64			-46,48
The F-Fisher criterion	2850,30	The Darbin-Watson (DW) criterion		2,01
Prob (F-Fisher criterion)	0,000			

The selected model is reliable based on the values of the F-test, t-test, determination coefficient, and DW criterion

The analysis of the results obtained in Table 2.7 shows that this model is the most optimal among the models we developed, as it fits all evaluation tests; therefore, we have selected this model as the most optimal model.

We have developed the following empirical model:

$$lny = -10,05 + 0,53lnx_1 + 1,49lnx_2 + 0,21lnx_{3(t-2)} + 0,01x_6$$
 (8)

According to the model results, a 1% increase in the share of business in employment leads to a 0.53% increase in the share of business in GDP. A 1% increase in business in exports results in a 1.49% increase in the share of



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business in GDP. An increase in the share of business in investments has a positive effect after two years, with a 1% increase in business in investments leading to a 0.21% increase in the share of business in GDP after two years. It was determined that the increase in the share of business in imports holds the least significance. [7]

In this paragraph, the factors influencing the use of digital technologies in the activities of small business entities were analyzed based on econometric models. Improving statistical analysis methods for assessing the development processes of small businesses in Uzbekistan, forecasting their development trends, determining which sector should be prioritized based on the analysis results, constructing and evaluating a model of development trends enable identifying and selecting the directions for business development.[11]

CONCLUSIONS AND SUGGESTIONS

Currently, the application of digital technologies provides significant opportunities to standardize business processes, improve efficiency, and adapt finished products to market demands. However, this process is slowed down by limited financial resources, low digital literacy, and the lack of necessary infrastructure for competitiveness.

Challenges also arise in attracting investors who participate in and finance the production of goods, as well as in the shortage of qualified personnel, which creates difficulties for small businesses in adapting to market demands and achieving sustainable growth.

When identifying the development trends of small businesses, statistical analyses reveal their crucial role in evaluating economic activity efficiency. Developed econometric models allow for the study of the relationships between economic indicators and factors affecting small businesses. This facilitates the development of effective business plans to optimize processes and improve performance.

Most initiatives aimed at establishing small businesses highlight the role of widespread adoption of digital technologies. This not only enhances the competitiveness of small business entities in domestic markets but also enables



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them to compete in international markets. Therefore, accelerating the digitalization process of small businesses is a critical requirement of today.

References

- 1. Lapusta M.G., Small business: Textbook. M: INFRA-M, 2008. p. 567.
- 2. Muftaydinov Q. Iqtisodiyotni erkinlashtirish sharoitida tadbirkorlikni rivojlantirish muammolari: Dis. avt. ref... iqt. fan. d-ri. T., 2004. 18 b.
- 3. Abdraxmanova G.I., Vishnevskiy K.O., Goxberg L.M. i dr. Indikatorы sifrovoy ekonomiki: 2020. / Statisticheskiy sbornik. M.: NIU VShE, 2020. 360 с.
- 4. Iuh
- 5. Dimitrios Asteriou and Stephen G. Hall. Applied econometrics. A modern approach using Eviews and Microfit. Revised edition. Palgrave Macmillan, New York, 2007. p.140-143.
- 6. Developed by the author.
- 7. International Bank for Reconstruction and Development (The World Bank), Digital Dividends. 2016
- 8. Kim, Seunghyun, Byungchul Choi, and Yong Kyu Lew. 2021. "Where Is the Age of Digitalization Heading? The Meaning, Characteristics, and Implications of Contemporary Digital Transformation." Sustainability 13(16):8909. doi: 10.3390/su13168909.
- 9. Priadko-Kanybekova, Olga. 2021. "On the Beginning of Changes in Technological and Economic Structure of Society and Problems of Sustainable Growth of Small and Medium-Sized Businesses."
- 10.Mansur Eshov , Boburjon Vafoev , Hamdam Homidov 2022 A modern approach to the digitization of agricultural activities. https://pubs.aip.org/aip/acp/article-abstract/2432/1/060019/2824203/A-modern-approach-to-the-digitization-of?redirectedFrom=PDF
- 11. Mamford E. Izdatelstvo informatsionпых nauk; Xershi. PA: 2003. Rekonstruksiya chelovecheskix sistem.