

Transforming Entrepreneurship Factors and Technologies in the Digital Economy

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Abstract—The goal of transforming the factors and technologies of economic growth is determined by the growth of gross domestic product. The development of the economic system as the limits of research has the problem of resource constraints (factors). It determines the particular importance of decisions related to their management. The quality of solving this truly basic problem of economic science lies in the assessment of the completeness of business function. The development of the theory of entrepreneurial function is connected with the transformation of its canonical form and the emergence of new factors related to the specificity of digital technologies of economic growth. Digitalization, as a factor of entrepreneurial function, is studied in modern periodicals from the point of view of single-factor function. There are no examples of systemic and complete analysis, in terms of synthesis of known factors (resources) of classical and neoclassical economic schools, as well as modern factors corresponding to the fourth, fifth and subsequent technological patterns. Currently, there are no studies of multifactorial production functions in the modern economic interpretation. The authors define digitalization as a stage and in the management of human resources, opening up new growth opportunities. Courses in subjects such as economic theory, human resource management should include sections related to the development of entrepreneurship and its implementation at different stages of economic development, from the point of view of economics and management, including the modern digital stage.

Keywords: *production function, entrepreneurial function, production factors, factors of growth, technology of growth, digitalization*

I. INTRODUCTION

Let us draw attention to some features of modern approaches to determining the role and importance of entrepreneurial function in the economic periodicals.

1. Specifics of approaches to the definition of business function, related to the exclusion from the sphere of research of certain components of business activity, its main characteristics

In economic theory, this is due to the transformation in terms of expansion of the production function, its definition as multi-factor. The study of entrepreneurship within the production function of a classical school and then within neoclassical theory predeterminates the development and exclusivity of management approaches. In entrepreneurship theory, the choice of factors of production is determined by the desire to reduce costs, consolidate advantages over competitive entrepreneurial structures, preserve and strengthen their position in the market. The result is represented by the expansion of the business function, its transformation into a multi-factor function. Modern researchers such as Okrepilov, S. Kuzmina, S. Kuznetsov [1] investigate the sustainable development of communities in the digital economy. D. Barsukov, S. Kuzmina, N. Morozova and A. Pimenova [2] describe the conditions for the formation of educational competences required by the new economy. Vorona-Slivinski L, Kuzmina S. [3] define development algorithms for economic growth. M. Vlasova, A. Pimenova, S. Kuzmina, N. Morozova [4] describe tools for sustainable enterprise development and consolidation of key advantages of entrepreneurial structures.

Trends in the change of the factor composition of the entrepreneurial function are related to the increasing special attitude to the environmental factors of growth [5], the formation and development of human capital, intellectual capital, the factor "knowledge," nanoscale factors of the sixth technological order [6], etc. Development of digital technologies allows to define digitalization as a factor of multi-factor business function [7]. However, modern publications provide research into single-factor entrepreneurial functions. Few exceptions are studies of economic processes within the framework of the theory of sustainable development, where the entrepreneurial function is determined by economic, social, environmental [8], institutional factors [9].

2. The difference in approaches to defining entrepreneurship as a category of economic theory is more related to proactive, risky, profitable activities and less to activities that provide a sustainable competitive advantage [10]. Shakina E. A., Barajas A., Molodchik M. point to the development of entrepreneurial function and related realization of new opportunities to increase competitiveness of entrepreneurial structures [11]. The role of accumulated competitive advantages during the period of their economic crisis and the restoration of efficiency of business companies should be emphasized [12, 13]. Some researchers, including Konovalov M.E., Kuzmina O.Y., Medvedev T.J. are abstracted from this section of business activity, outlining the boundaries of analysis of independent, proactive and risky activities with full responsibility of the entrepreneur [14]. Within the framework of the entrepreneurial function, the "digitalization" factor allows to ensure the use of breakthrough technologies that change the affiliation of activities to the fourth technological line.

3. The level specificity of business function research is usually related to the exclusion from the sphere of analyzed processes of one of the structural levels of economic research.

Conceptually, the study of economic development at the microeconomic level is represented by the development of the theory of production function. At the level of macroeconomic research, the transformation of factors and technologies of economic growth is based on the transformation of factors and technologies of entrepreneurship. Transformation of economic growth technologies is determined by the search for breakthrough technologies such as industrialization, automation, programming, digitalization, biotechnology, nanotechnologies, etc. However, along with the industrial Internet of Things, augmented by reality, big data technologies, cloud technologies, digital modeling, the problems associated with the dark sector of the Internet are growing. In the structure of indicators of the non-observed economy, this sector of financial flows poses new and increasingly serious economic security challenges related to risk management and threats to digitalization of the economy [15].

In the Russian Federation since 1990 ownership relations are changing quite rapidly at all levels of the economy, including nanoeconomics, which most often falls out of the field of research of modern economists. Changes defined at

meso-, micro- and macro-levels of the economy are recorded. The role of education in the development of the digital economy is determined by new requirements to the structure of skills and competences of employees - up to 40 percent of participants in the economic process should have digital knowledge. Today, the entrepreneur is proactive and has the opportunity to apply to various development institutions to solve his tasks. The most popular institutions are the Industrial Development Fund and the SME Support (Development) Fund of the region. In 2017 the first was addressed by 33,3% entrepreneurs who took part in the survey of the Russian Federation, in 2018 – 39,7%. In 2017 27,3% of entrepreneurs applied to the SME Support (Development) Fund of the region, and in 2018 – 24,7% [16]. These data cannot provide an indication of the degree of entrepreneurial activity of SMEs, but they clearly show the development of an entrepreneurial initiative that is being formed at the nano-economic level. The authors find options for stabilizing the situation in the development of the Institute of Education.

4. The choice of digital technologies stimulates innovative activity of all forms of entrepreneurship and slows the growth of etatism.

Digitalization, as a technology of economic growth, can be an incentive for innovation [17, 18]. Small and medium-sized forms of entrepreneurship represent up to 20 per cent of gross product as flexible and efficient forms of global entrepreneurship. Russian statistics record in the structure of ownership relations processes of government, rapidly increasing changes, including with the reduction of the private sector, with the refusal to invest. Indirectly, this confirms the business climate estimates presented in the Report on the State of the Business Climate in Russia in 2018. In 2018 negative estimates were given by about half of the representatives of small and medium-sized enterprises, who made up more than 50% of the surveyed representatives of SMEs. More than 30% of entrepreneurial small and medium-sized structures do not plan to invest at all in 2019, and in general the number of companies not planning to invest at all is increasing [18]. In the structure of monetary income of the population the share of income from entrepreneurial activity decreases from 15,4% in 2000 to 7,6% in 2017. Income from property in the same structure has the highest level in 2005 – 10,3%, and further fall leads to 4,3% in 2017 and 4,2% in 2018 [19].

II. METHODOLOGY

The study of transformation of factors and technologies of entrepreneurship is methodically based on the theory of production function. The approach taken was developed because:

1. Approaches to research of the system of factors of production and entrepreneurship have been defined. Many approaches correspond to many assessments of entrepreneurial functions in terms of completeness and systemicity.

2. There are ambivalence of approaches to research: processes of digitalization, greening, institutionalization. They are both seen as factors and technologies for economic growth.

III. RESULTS

The definition of the system of factors of production as the object of research has a number of features:

- Analysis of modern periodic publications related to the fundamental factor analysis of the economic system makes it possible to determine that the system of factors is transformed simultaneously with the development of the economic system: the composition of factors and the relationship between them changes;
- Modern researchers, and the authors of this article, among other things, consider a certain factor, which determines fragmentation of the final production function. The exception is only research within the framework of the theory of sustainable development, where at least three factors simultaneously determine the outcome of development (economic, social, environmental). Note that many authors stress the additional inclusion of an innovative as well as an institutional factor in the subject area;
- As a result, the study uses mainly single-factor functions, which do not allow to fully and systemically describe the result of economic activity, but allow to focus interest in systemic economic problems and implement the solution of specific tasks.

IV. DISCUSSION

The study makes it possible to formulate two discussion issues:

- Rare studies of economic development are based on multi-factor entrepreneurial functions. As a rule, these are studies within the framework of SD theory, when at least three tasks are set simultaneously: economic, social, environmental;
- Digitalization, greening, institutionalization can be considered both as factors and technologies of economic development.

V. CONCLUSIONS

Summing up, we come to several conclusions:

1. The development of the theory of entrepreneurial function is connected with the transformation of its canonical form and the emergence of new factors related to the specificity of new technologies of economic growth.
2. Digitalization, as a technology of economic growth, can stimulate innovation in the face of its slowdown, especially in the small and medium-sized enterprise sector.
3. Digitalization will change the picture of the single-sector representation of the fifth technological order, at least in the leading sectors of the Russian economy.
4. In the non-observed economy, the sector of the so-called dark Internet is changing, with new and increasingly serious tasks of managing risks and threats of digitalization of the economy.

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