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RUSSIAN CITIZENS' ECONOMICAL BEHAVIOR IN THE FIELD OF ELECTRONIC PUBLIC SERVICES

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Abstract

The article represents an analysis of the trends in the activity of Russian citizens' economical behavior in the sphere of electronic public services, as well as factors influencing its strength and direction. Based on the study of theoretical works, the reports (and the empirical analysis of Russian statistical data, the author refine the conceptual theoretical understanding of the mechanism and methodological provisions for analysis of population's economical behavior in the field of electronic public services. In addition to it, the author makes analytic generalization of basic conditions for the interactions between Russian citizens and the government in the sphere of obtaining state's electronic services also the study presents assessment of its influence on the economic deviant behavior forms formation. Based on the developed regression model of residents' economical behavior in the field of public electronic services, and made out of this model dynamic characteristics the three groups of population indicators (high, medium and low activity level), the study recommends to use this system at diagnosing the features of economic behavior that depends on the differences in industry-wide, level of state's services (federal, regional, local services) and so on.

Keywords: Economic behavior, Russian residents, electronic public services, "digital government", multiple regression model.

1. Introduction

A significant contribution to the theory of an economic behavior of person was made by the foreign researchers Kahneman & Tversky (1979), Herrnstein & Prelec (1992), Thaler (1980), Shafir (2012), Camerer, Loewenstein, & Rabin (2003) and Russian researchers Zhuravleva, Manokhina, & Smagina (2016).

One of the most urgent issues in the field of improving public administration process that affect the changes in the Russian residents' economical behavior, is the technology modernization for interactions between state power and society based on modern information and communication technologies (ICT) (Bannister & Connolly, 2012; Kinder, 2012; King & Cotterill, 2007; Levy, 2015; Mell & Grance, 2011; Mergel, 2010; Peedu & Lamas, 2011; Scott, 2005).

It was carried out within the framework of the concept for formation electronic government in Russian Federation until 2010. In this concept, the term "e-government" refers to a new form of state authorities' activity organizations, which provide a qualitatively new level of promptness and convenience for organizations and citizens in the field of receiving public services and information concerning state authorities activity (ZHigun, 2017).

The most important task to build the comfortable for life digital society is modernization process of all the Russian authorities activities on the basis of the translation state services into electronic format. The solution of this problem is a necessary step for the transition to the electronic government, which would cause changes in the inhabitants' economical behavior during the interacting process with the authorities (Governor's Center for Local Government Services, 2010; Kaylor, Deshazo, & Van Eck, 2001).

At the base of this task is the Federal law of the Russian Federation No 210-FZ of July 27, 2010 "On the organization of the provision of state and municipal services". This law defines the principles and procedure for the provision of state (local) services, the conditions and procedure for its payment, the applicants' rights and authorities' responsibilities.

During the course of implementing the "e-government" concept, the conceptual emphasis was shifted to a "digital government", which radically influenced on the Russian inhabitants' economic behavior in interaction with the authorities (ZHigun, 2017).

The essence of the occurred changes in this phenomenon most accurately reflects by the interpretation of Gartner company, which defines the "digital government" as a government created and operating in such a way that advantages digital date using during the process of public services optimization, transformation and creation (Arkhipova, 2016, p.819). It focuses on information and data rather than on processes and services, as it was in the concept of "e-government". Along with this, Melitski (2004) points out that e-government services ultimately ensure fair citizens' participation in governance.

Published by the UK government report "Digital Efficiency Report" in 2015, indicates that digital transactions are 20 times cheaper than phone transactions, 30 times cheaper than mail, 50 times cheaper than offline. All these factors radically change Europe inhabitants' economical behavior.

2.   Problem Statement

The development of "e-government" in Russian Federation has led to the fact that more than 27000 public services (federal, regional and local levels) are available to residents and entrepreneurs at the United Public Services Portal (UPSP). 207 new public services have appeared at UPSP in 2017, and now 968 public services are available to users at UPSP (Minsvyaz.ru, 2018, February 8).

More than 66 million Russian citizens have registered with the UPSP (Karasev, 2018). As a result of this economical behavior transformation, the residents applied to receive 1.3 billion public services at the UPSP in 2017, which is three times more than in 2016. The payment volume made by users of the portal had been increased almost fourfold and amounted to 30.3 billion rubles for this year. Simultaneously the number of registered users at the United Public Services Portal (UPSP) had been increased from 25 million up to 65 million (Karasev, 2018).

According to Barshev (2018), the number of services that provided by the UPSP portal in 2017 has doubled compare to 2016.

At the same time, on average, only 1.2 million users have been visiting the United Public Services Portal every day, who spending only 6.5 minutes on it (Digital.gov.ru. 2018, February 8), besides that 35.7% of the population still did not use electronic state and municipal services (Digital.gov.ru, 2018, February 14). The achieved results of the Russian inhabitants' economic behavior in sphere of public electronic services are lower than the level of OECD countries' residents, where already in 2013, 64% of population had used e-government services for receive, download, fill and transfer state forms online (OECD: Digital Economy Outlook, 2015, p.52).

Insufficient knowledge of mention aspects for the population's economic behavior mechanism in the field of receiving electronic public services, is the basis of need for conducting a research in this direction.

3.   Research Questions

The "digital government" formation process in Russia has led to the emergence of new sphere in the public sector that drastically transformed the residents' economic behavior, who has been using state and municipal services. However, due to the fact of its sudden appearance, there was not enough time to form scientific idea about what constitutes the mechanism for regulating Russian residents' living economical behavior in the sphere of electronic public services? What factors and with what level of force influence the activity of the population in the field of electronic public services? What direction does those factors determine the activity of the population in this field of services?

These issues made up the main research question of the current study.

4.   Purpose of the Study

Purpose of the study is to develop a scientific understanding of Russian citizens' economical behave mechanism in the field of electronic public services and the reasons of their activity there.

5. Research Methods

The research methodology is based on general and special methods of scientific knowledge: theoretical analysis, empirical research methods of the population's economical behavior in the field of public electronic service and creation due it the multiple regression model for the factors that determine this behavior by using standardized mathematical statistics methods, the methods of cause-effect relations and the part-whole theories.

The research is focused on the evaluation of a relatively new phenomenon within a real-life context of e-government practices. It is developing a comparative case study in the Russian state and municipal electronic services sphere. The study incorporates quantitative research methods of correlation analysis, which is supplemented by a qualitative analysis of the variables composition and its functions at shaping the population's economic behavior.

6. Findings

As it was mentioned above, the study of Russian residents' economic behavior activity development in sphere of electronic public and municipal services presupposes an analysis of its operation's mechanism. For this very purpose, using the "Statistica 11" application program package we have developed a multifactorial regression model of influencing every kind of electronic public and municipal services for total citizens' share, who actively use the Internet to receive them.

The model with 22 concrete types of electronic services that accounted by Federal State Statistics Service has the form $Y = a + \sum b_i$, where Y is the total share of citizens using the Internet for receiving electronic public and municipal services; a – contribution of unrecorded types of electronic services; b_i – regression coefficients i-th particular kind of electronic service.

The basis for the model construction was the Federal State Statistics Service' data on the use of the Internet for obtaining state and municipal services by its types the whole Russian population that divided on subjects of the Federation, Autonomous regions and districts for 2016.

Verification of constructed model on Table 01 data showed that it adequately reflects every analyzed electronic services particular kind impact on the changes of Internet users total share.

Table 01. Parameters of the multiple regression model about the population activity's effect on the total share of received electronically services (Calculated by author with Rosstat table 5.9 date)

Categories of state and municipal services	b_i – regr. coef.	Std.Err., %	t-statistica
Y-intersection (contribution of unaccounted types of services), %	14,1123	1,83	7,727
Nature and ecology	2,67028	1,02	2,612
Labor and employment	1,75541	0,83	2,113
Security and law enforcement	1,13938	1,63	0,697
Property and land relations	0,66418	0,38	1,747
Licensing activity of government bodies and local self-government	0,6545	0,89	0,734
Education and science	0,59699	0,13	4,722
Culture and art	0,56503	0,39	1,433

Manufacture, construction and trade	0,52008	1,63	0,318
Healthcare and medicine	0,48596	0,07	7,288
Taxes and fees	0,42145	0,12	3,569
MIA/ GIBDD services	0,17102	0,19	0,911
Housing and utilities	0,1674	0,11	1,551
Passports, registration	0,11752	0,27	0,439
Family	0,02503	0,72	0,035
Economics, finance, statistics	-0,10078	0,84	-0,120
Social maintenance	-0,13249	0,33	-0,404
Ad and media	-0,29103	0,94	-0,310
Other	-0,33213	0,34	-0,990
Intellectual property protection	-0,47861	2,17	-0,221
Court indebtedness	-0,75291	0,59	-1,285
State and budgetary institutions, non-profit organizations	-1,28905	0,83	-1,544
Entrepreneurial activity	-2,6213	1,77	-1,479

For example, inputting the reporting data of Russian Federation subjects into the model showed that the deviation of the theoretical Y value from the actual for Moscow was 0.8%, the Republic of Tatarstan – 2,5%, Khabarovsk Krai – 2,8%, Novgorod oblast – 5,6%, The Chechen Republic – 6,8%, Altai Krai – 6,8%, Krasnodar Krai – 10,3%, Sverdlovsk oblast –12.1%, Voronezh oblast – 23,3% and for the Republic of Ingushetia – 23.3%. The error analysis represented that the smaller list amount of electronic services used by citizens residing on the territory administrate by the regional authorities, the greater the deviation of the theoretical Y value from the actual one. Consequently, the reduction in the types of public services has a negative impact on the quality of calculated Y values. The obtained results indicate that the constructed model has the quality inherent in dynamic models to allow controlling the transition of each regional electronic service systems to the desired conditions, taking into account the occurring territorial features.

In general, the constructed model allows revealing the mechanism of concrete types of services' influence on the Internet users total share. It was found from the model analysis that it reveals instability of the investigated system, since the sum of the all regression coefficients values is greater than zero: 3.95595.

Anyhow, the identified instability of the electronic state and local services system that has developed in Russia provides it the capability for the development. In particular, an increase in each of the 22 service categories by one percent will result in an indicator of the total citizens' proportion using the Internet when obtaining electronic state and local service to increase by 3.95%.

In the identified by us mechanism system some residents' demands for electronic public services make it unstable, thus contributing to its development. This is pointed out by positive signs before its regression coefficients (Table 01). Due to them the most influence on the dynamics development of system occur activities of residents' behavior towards the indicators "nature and ecology (2,67028), labor and employment (1,75541), the security and law enforcement (1,13938)". At the same time, that

indicators most of all determine the instability of the interaction system between residents and authorities about electronic public services in Russia.

On the contrary, indicators with negative sign before its regression coefficients, especially "state and budget institutions", "nonprofit organizations" (-1,28905) and "entrepreneurship activity" (-2,6213) lead to a decrease in the use of electronic public services by Russian residents. However, those very indicators provide stability for the investigated system.

Indifferent indicator to the changes in the development of the electronic public services system is residents' behavior to the indicator "family" (0,02503) with its seven subspecies of civil status registers.

The regression intersection value equal to 14.11%, indicates unaccounted factors in the residents' economic behavior, that specifically affect the model. This finding follows from that those indicators includes such categories of concrete services that cannot be unambiguously expressed through its regression coefficient with the respect to the total share of e-services because those indicators have the averaged values of 4-8 constituent its subspecies.

Thus the indicator "health care and medicine" consists of 8 subspecies services, "culture and art" of 8 subspecies, "family" of 7 subspecies civil status acts, "social security" of 7 subspecies, "education and science" of 6 subspecies, "manufacturing, construction and trade" of 6 subspecies, "taxes and fees" of 6 subspecies, "intellectual property protection" of 6 subspecies, "MIA/GIBDD services" of 4 subspecies, "property and land relations" of 4 subspecies, "housing and utilities" – from 4 subspecies.

Basically, for this very reason, the values of the seven indicators from the 22-nd during transforming t-statistics into probability, proved out less than 53%: family (7 subspecies), social security (7 subspecies), manufacturing, construction and trade (6 subspecies), intellectual property protection (6 subspecies), passports & registrations (3 subspecies), ad and media (3 subspecies), economic, finance, statistics (1 subspecies).

The dynamics of the whole system development is determined not only by the value of revealed regression coefficients of the constructed model, but also by the standard errors of the indicators (Std.Err.) for each category of the state and local electronic services. The standard errors analysis shows that the indicators form three dynamic impact groups: **"High dynamics"** from 2.17 to 1.63 percentage points ("intellectual property protection" 2.17%, "entrepreneurs activity" 1.77%, "security and law enforcement" 1.63%, "manufacturing, construction and trade" 1.63%); **"Medium dynamics"** from 1,02 to 0,59 percentage points ("nature and ecology" 1,02%, "ad and mass media" 0,94%, "licensing activity of government bodies and local self-government" 0,89%, "economics, finance, statistics" 0,84%, "labor and employment" 0,83%, "state and budgetary institutions, non-profit organizations" 0.83%, "family" 0,72%, "court indebtedness" 0,59%); **"Low dynamics"** from 0,39 to 0,07 percentage points ("culture & art" 0,39%, "property and land relations" 0,38%, "others" 0,34%, "social security" 0,33%, "passports, registration" 0,27%, "MIA/GIBDD services" 0,19%, "education and science" 0,13%, "taxes and fees" 0,12%, "housing and utilities" 0,11%, "health care and medicine" 0,07%).

The revealed indicators' dynamic characteristics indicate that regional features concerning the provision of state and local electronic services are the crucial factor for the development of the group with high dynamics of the standard error. The factors determining the development of the group's indicators with the medium dynamics of the standard error are both industry-wide trends and regional features. The

low dynamics group indicators reflect an impact on the total share of e-government services through the regression coefficient mainly under the action of trends in their General industry development.

As a result of the analysis of the dynamics indicators by standard error it was revealed that the development of a whole system of public and municipal services through the Internet occurs to the regional and sectoral factors influence. We investigated the analysis of regional activity factors' influence on the degree of electronic accessibility of state and local services earlier.

7. Conclusion

The presented study of the Russian citizens' economic behavior in the field of public electronic services has made it possible to achieve the research purpose and find out questions addressed by the research.

The study of the transformation concept from "e-government" into "digital government" revealed that Russian citizens' economic behavior in the field of electronic public services from 2006 to 2018 has been many times activated both in terms of the service consumed volumes and in terms of its types and subspecies.

The formation of the United Identification and Authentication System (UIAS) with access to more than 4000 state and commercial portals, and its assurance access to the United Public Services Portal (UPSP) has strengthened the applicants' tractability level.

The existing regional differences in the public services applicants' economical behavior significantly impede the development to government activity at this sphere.

The analysis of the made up model has shown that it is dynamic, which for all admissible situations is able to pass from initial state to the set of many others, which are inherent in one or another regional features of the Russian Federation subjects, Autonomous regions and districts.

For the development forecast of the total share of electronic public services, one should proceed from the fact that in 3-5 years passed the population share of middle and older ages applicants will grow steadily and their activity in obtaining electronic public services will enhance, which will ensure the consumed electronic services' growth by 1.5-2.0 percentage points per year.

Application of recommendations based on the research results will provide a scientific justification for the volumes, structure and quality of electronic public and municipal services provided to the population.

Based on the made-up model of residents' economic behavior in the field of public electronic services and opened up due to it of the three population groups dynamics characteristics indicators (with high, medium and low activity), it is recommended to use this model in diagnosing the features of economic behavior that depends on the differences in industry-wide, regional and local services.

For a justified differentiation of the activity of population's economic behavior in the field of electronic public services, it is necessary to conduct a study of the groups' demographic characteristics by their age and gender.

By taking into account the demographic and behavioral segmentation of the applicants should carry out further research on the factors that determine the characteristics of population's economic

behavior in the field of electronic public and municipal services which will allow determine more accurately the target segment' needs and increase the applicants' satisfaction.

Acknowledgments

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