

OPERATING EFFICIENCY OF QUALITY MANAGEMENT SYSTEM OF STATE EXECUTIVE AUTHORITIES

This paper is aimed at justifying the application of the methodology for evaluation and improvement of the operating efficiency of the quality management system (QMS) for state executive bodies. The term "operating efficiency of QMS" is considered by the authors as a ratio between the effectiveness of the group of QMS processes "Management responsibility" and the resources used for their development, implementation and improvement. The term "management responsibility" means "the responsibility of officials implementing powers of the authority". The relevance of the article is dictated by the fact that on the one hand, the normative legal acts issued by the Government of the Russian Federation declare the primacy of the problems of life quality improving, health preservation and increasing of citizens' life expectancy, on the other hand, they initiate an increase of the retirement age and practically a "lifelong" need of citizens labor activity. This problem stirred the Russian public and pointed once again to the low quality of the country social management and the need to assess the responsibility of officials implementing powers of the authority.

JEL: O11; O21; O43; P11

1. Purpose, research objectives, theoretical and methodological basis

The purpose of the study is to justify the application of the methodology for evaluation and improvement of the operating efficiency of QMS for state executive bodies with a view to improve the population life quality of the country first of all in the direction of health saving. The term «operating efficiency of QMS» proposed by the authors is considered by the authors as a ratio between the effectiveness of the group of QMS processes «Management responsibility» and the resources used for their development, implementation and improvement. The term «management responsibility» means «the responsibility of officials implementing powers of the authority».

The QMS of Russian enterprises and government executive bodies of the Russian Federation are **the objects of research**.

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The methodological apparatus for evaluation and improvement of the QMS operating efficiency is **the subject of the research**.

The key provisions of domestic and foreign theory and practice of quality management, the works of the aforementioned authors on the issues of development and improvement of the assessment and QMS effectiveness improvement serve as **the theoretical and methodological basis** of the study. System, process, situational and quantitative approaches; general scientific methods of analysis, synthesis, analogy, formal logic, observation, experiment; methods of social research, modeling, expert analysis, economic and statistical methods were used to solve the problems of scientific research.

2. Relevance of the study

The relevance of this paper is dictated by lots of questions from the population to the authorities, and first of all, with regard to the imbalance caused on the one hand by the Government's decision of June 14, 2018 on the gradual increase of the retirement age in the Russian Federation. It is expected that by the year 2034 men will retire at 65 and women at 63 (now 60 and 55 years respectively). On the other hand, today average life expectancy in Russia is 71.9 years with an average life expectancy of 66.5 years for men and 77 for women. Thus, taking into account the gradual increase of the retirement age in the Russian Federation the age of surviving retirement for men will be 1.5 years and 14 years for women. The Russians associate the increase of the retirement age not with the need to reform the pension system (it's the official version) or the lack of sufficient financial security to fulfill the social obligations of the authorities to the population, but with the poor quality of management and the inability to make other decisions to stimulate the national economy growth and the growth of social deductions from working citizens income in the Pension Fund of the Russian Federation.

Indicators of the government programs implementation can also indicate the existence of a quality management problem in government. For example, according to the program "Industry development and increasing its competitiveness" (Programs.gov.ru, n.d) the effectiveness of achieving its indicators for the period 2013-2017 looks as follows:

- in 2013 – 34 out of 94 indicators were achieved (36.2%);
- in 2014 – 81 out of 170 indicators were achieved (47.6%);
- in 2015 – not stated;
- in 2016 – 94 out of 200 indicators were achieved (47%);
- in 2017 – 57 out of 200 indicators were achieved (28.5%).

On the one hand, it is possible to link the low effectiveness of program targets achieving with anti-Russian sanctions, but on the other hand, the first sanctions were introduced on March 17, 2014, and the efficiency indicators were extremely low (36.2%) as early as 2013, so the reasons for the goal-reaching are not so much external as internal ones and are more

connected with the low efficiency of managing state programs and the responsibility of officials for their implementation.

In this regard, the national development goals stated in RF Presidential Edict No.204 (The RF Presidential Edict 204, n.d) and first of all: to ensure sustainable natural growth of the population of the Russian Federation; increase of life expectancy up to 78 years (by the year 2030 – up to 80 years); ensuring sustainable growth of citizens' real income as well as increasing the level of pension provision above the level of inflation should be treated with some prejudice from the point of view of their achievement without changing the existing system of the Russian Federation managing state programs.

So, on the one hand, the normative legal acts issued by the Government of the Russian Federation declare the primacy of the problems of life quality improving, health preservation and increasing of citizens' life expectancy, on the other hand, they initiate an increase of the retirement age and practically a "lifelong" need of citizens' labor activity. This problem stirred the Russian public and pointed once again to the low quality of the country social management and the need to assess the responsibility of officials implementing powers of the authority.

In a number of works we have justified the need to improve the methodology for calculating the rating of the Russian regions for their life quality, including the health-related quality of life indicators, as well as the need to take them into account when assessing the effectiveness of the executive authorities of the subjects of the Russian Federation, districts and municipal areas (Schmeleva, *Drukerovskij vestnik*, 2017; Schmeleva, *Innovation Management*, 2016; Schmeleva, *Quality and life*, 2016).

Having carried out a comparative analysis of indicators for assessing the population life quality used in the methodology of Eurostat (Final report of the expert group, n.d) and the methodology of the "Ranking of Regions of the Russian Federation for the life quality in 2017" (Ranking of Regions of the Russian Federation, n.d) (Table 1), it can be concluded that the indicators of the Eurostat methodology are aimed at assessing the casual effect of the population life + health status + access to health = life expectancy, while the life quality rating in the Russian Federation is only a kind of statement of the facts on the static characteristics of population mortality and infrastructural provision of health care services without revealing the causal relationship of a certain life expectancy of the Russian citizens.

Moreover, in European practice, the indicator of healthy life years (HLY).has been used for quite a long time in assessing of the population life quality and managing the implementation of government programs in the social sphere.

Table 1

Comparison of the “Health” group indicators according to the methodology of Eurostat in 2017 and “Ranking of Regions of the Russian Federation for the life quality in 2017”

Eurostat methodology	The methodology of the "Ranking of Regions of the Russian Federation for the life quality in 2017"
1. Indicator "Results": 1.1 Life expectancy at birth 1.2 Health status: 1.2.1 Healthy Years of Life 1.2.2 Self-perceived health 1.2.3 Self-evaluation of mental health	Life expectancy at birth; Population mortality at working age; Infant mortality; Rate of perinatal mortality; The overall sickness rate of the entire population.
2. Determinants (healthy and unhealthy behavior) 2.1 Body mass index 2.2 Daily smokers 2.3 Hazardous alcohol consumption 2.4 Practice of physical activity 2.5 Fruits and vegetables consumption	
3. Health care access: 3.1 Unmet need for medical care	Health facilities availability: Doctors provision; Nursing staff provision; Doctors' working load (the number of visits per doctor); The capacity of outpatient clinics; Provision of hospital beds for 100 thousand people; The average bed occupancy per year; The number of departures of ambulance brigades, reaching the place of call within 20 minutes; The number of departures of ambulance brigades arriving to the place of road traffic accident within 20 minutes.

The indicator of healthy life years measures the number of remaining years that a person of specific age is expected to live without any severe or moderate health problems. The notion of health problem for Eurostat's HLY is reflecting a disability dimension and is based on a self-perceived question which aims to measure the extent of any limitations, for at least six months, because of a health problem that may have affected respondents as regards activities they usually do (the so-called GALI – Global Activity Limitation Instrument foreseen in the annual EU-SILC survey). The EU-SILC question is: for at least the past six months, to what extent have you been limited because of a health problem in activities people usually do? Would you say you have been:

- severely limited?
- limited but not severely?
- not limited at all?

Based on this variable the proportions of the population in healthy (answer code: "not limited at all") and unhealthy conditions (answer codes: "severely limited" and "limited but not severely") are calculated by sex and age (Ec.europa.eu, n.d).

The Eurostat report "Final report of the expert group on quality of life indicators 2017 edition" clearly indicates an intention to equate in the future the indicator of "life expectancy at birth" to the indicator of "healthy life". Healthy life expectancy in the Russian Federation is not estimated by region, and only in 2016 this indicator was measured for the capital and it was 62 years old, while the total life expectancy in Moscow is 76 years (M24.ru, n.d). In the Russian study, a healthy life meant the absence of pronounced or complete restrictions on at least one of the six basic activity indicators: the ability to wash, dress, walk around the room, eat, get out of bed and use the toilet without any help (Nodelman, n.d). It is worth noting that the Russian study did not consider the issue of restrictions in the performance of a person's usual work activity and daily exercises. Thus, the substitution of the term "healthy life", interpreted in the Eurostat methodology as an assessment of any restrictions on activities usually performed by a person only on the evaluation of primary human activity, was occurred.

Such a one-sided view of the situation with the life quality of the health-related population of the country is not only not aimed at the implementation of the Federal Law No. 323-FZ of November 21, 2011 "On the fundamentals of protecting the health of citizens in the Russian Federation", but also hinders the conduct of a cause-and-effect analysis: the population way of life + health status + access to health care = life expectancy. This conclusion can be confirmed by the currently being developed Project "Interdepartmental Strategy for Healthy Lifestyle, Prevention and Control of Non-communicable Diseases for the Period until 2025" (Interdepartmental Strategy for Healthy, n.d), according to which "addressing the prevention of non-communicable diseases and the formation of a healthy lifestyle among the population is impossible due to the almost complete absence of intersectoral and interagency cooperation, the absence of any interest in solving the problems of the prevention of non-communicable diseases by the numerous federal executive bodies that do not have specific tasks, indicators of their implementation, legal and public responsibility for their implementation".

So in the current circumstances it is necessary to revise the issue of the evaluation and responsibility of federal and municipal authorities for the Russians' life quality related to health – the main competitive advantage of the country.

3. Study results

Within the research objective, the following approaches to assessing the effectiveness of enterprise management should be emphasized (Shmeleva, Russian journal of entrepreneurship, 2010):

- the functional model of management assessment for management system improving in order to improve the business competitiveness (Maslov, Watson, Chilesheche);

- the methodology of managerial added value estimating ("Sony" corporate methodology);
- complex rating assessment of the enterprise management system quality (Svirina);
- the positional diagnostics of control systems (Mashkin);
- the system for the management quality assessing of an industrial enterprise (Stepanova);
- the method of self-assessment of management level at industrial enterprises (Akmayeva).

An overview of these approaches is presented in Table 2.

Table 2

Comparative characteristics of approaches for assessing the QMS efficiency

Comparative criteria	Approaches for assessing the enterprises QMS efficiency					
	Functional model	Management value appraisal	Rating assessment	Positional diagnostics	Management quality assessing	Assessment of management development level
1. The methodology of constant improvement of E. Deming	✓		✓		✓	✓
2. Directors and managers receive a tool to search for "narrow" areas of the organization's management, as well as the ability to compare the results of "before" and "after" corrective and preventive actions.	✓		✓	✓	✓	✓
3. The universal nature and the possibility of using various business entities in activity assessing, regardless of their property category.	✓		✓	✓	✓	✓
4. The requirement of high competence of directors and managers of the enterprise in the field of management theory and quality philosophy.	✓		✓		✓	✓
5. Development of staff teamwork	✓	✓	✓		✓	✓
6. Economic dimension of the personal contribution of a whole		✓				

division of managers or a group of managers.						
7. Accounting for both financial and non-financial indicators of the enterprise.			✓			
8. Characterizes the quality of management functions according to Fayol H.	✓		✓		✓	
9. It is based on an assessment of the position of the individual in society, according to which people differ in their attitude to themselves and to the society, to norms and knowledge.				✓		
10. Evaluates the nature of management ties, using the organizational structure of the company as a "foundation".				✓		
11. The enterprise management system is considered as the main object.				✓		
12. It is based on the use of questionnaires and interviewing.	✓		✓		✓	
13. Representatives of the expert group act as subjects of assessing the quality / performance / contribution / management benefits.			✓	✓	✓	✓
14. It is specially targeted at enterprises implemented QMS in accordance with ISO 9000.						
15. It identifies not only resources for effective management, but also external barriers to its development.						✓

For the purpose of forming a methodical apparatus for the operating efficiency of the company's QMS, approaches to assessing the efficiency of the QMS were identified (Table 3).

Table 3

Comparative analysis of approaches for assessing the QMS efficiency

Approaches for assessing the enterprises QMS efficiency	Analytical aspects of approaches
1. Determining the economic efficiency of QMS based on the establishment of a causal relationship between the QMS implementation and the economic indicators of companies: 1.1 Determining the QMS economic efficiency based on the correlation of results and costs.	Economic efficiency = Results / Costs (or payback period) The following cost indicators are considered as economic results: production volume, gross income (or turnover), profit, net income. Since the costs and results are time-spaced, it is suggested that they can be considered at the same time by using the discounting procedure.
1.2 Determination of economic efficiency based on the relationship between benefits and costs.	Kachalov V. (Kachalov, 2005) points out that the return of capital spent on the quality system certification usually comes within 9-16 months depending on the firm.
1.3 Determining the QMS impact on the financial position of an enterprise.	A comparative analysis of the financial situation of enterprises that have implemented and certified quality systems and enterprises that do not have similar systems is carried out. The financial position of companies is assessed on the basis of four criteria: the rate of return per assets unit; the Tobin test; the ratio of the cost price of the sold products to the sales volume; assets turnover. The methodology of Barber and Lyon is used to study the impact of certification on financial indicators.
2. Estimation of economic efficiency of enterprise activity as a whole and QMS based on customer satisfaction.	The approach is based on the use of the Swedish Quality Index (SQI) and the American Customer Satisfaction Index (ACSI). The interaction of customer satisfaction and the economic indicators of the enterprise are revealed in the process of assessing SQI and ACSI.
3. Assessment of QMS efficiency based on a balanced scorecard (BSC).	The use of the BSC makes it possible to assess the QMS efficiency for different stakeholders from the perspective of its impact on the enterprise financial indicators, customer satisfaction and loyalty, the performance and efficiency of internal processes, as well as the satisfaction of the enterprise personnel.
4. Assessment of QMS efficiency by Kopnov V., Rogov A.	In addition to the task of assessing the QMS efficiency, the BSC performs the function of broadcasting the organization's strategy (including policy and quality objectives) to the executors and affects budgeting processes (through management review). For enterprises that are only mastering the ISO 9000 standards methodology a modified simplified version of the BSC is proposed, close to the ideology of quality management. Such a model is considered as a benchmark when starting the processes of continuous QMS improvement.
5. Assessment of QMS efficiency by Samorodov V.	The enterprise QMS efficiency is determined by the processes QMS efficiency taking into account the scale of gravity: from 0 (QMS does not function and requires development) to 1 (QMS works effectively and does not require the development of any

6. Assessment of QMS efficiency by Shabalina S., Artemenko E.	actions). The evaluation of QMS efficiency is carried out as a weighted average evaluation of the partial performance criteria: customer satisfaction with the products quality; compliance with product requirements; the degree of compliance with the requirements of GOST R ISO 9001, depending on the activity type of the enterprise; degree of implementation of established performance criteria processes; suppliers' products quality. Weighting factors are formed expertly.
7. Assessment of QMS efficiency by Shvets V.	The approach involves the development of method 1.1, which is described above. The economic effect of the QMS implementation is reflected through the increase in output of high-quality products in the t-year. This indicator is compared with the costs that were incurred during the years of implementation and functioning of the QMS.

The analysis of approaches for assessing the QMS efficiency confirms the lack of attention to the problem of assessing the involvement, responsibility, leadership and competence of enterprise management in the processes of designing, developing and improving the QMS – i.e. evaluation and improvement of the performance of the group of QMS processes "Management responsibility".

The analysis of normative legal acts containing a list of indicators for assessing the activity effectiveness of the executive authorities of the constituent entities of the Russian Federation, local self-government bodies of the city districts and municipal districts also showed the absence of indicators (except life expectancy at birth) reflecting the life quality of the health-related population (Table 4).

Table 4

The list of indicators for assessing the activity effectiveness of the executive authorities of the constituent entities of the Russian Federation, local self-government bodies of the city districts and municipal districts

The RF regulatory legal act	Indicators for assessing the activity effectiveness
The RF Presidential Edict No. 548 of November 14, 2017 "On the assessing the activity effectiveness of the executive bodies of the subjects of the Russian Federation". The list of indicators for assessing the activity effectiveness of state executive authorities of the Russian Federation. (The RF Presidential Edict 548, n.d)	<ol style="list-style-type: none"> 1. Life expectancy at birth. 2. Dynamics of real average monthly accrued wages. 3. The ratio of per capita monetary population income, minus the sums of mandatory payments and payment for housing and communal services to the cost of a fixed set of basic consumer goods and services. 4. The share of the population whose cash incomes is lower than the subsistence minimum established in the constituent entity of the Russian Federation. 5. The coefficient of housing availability (the number of years required by a family of three people to purchase a standard apartment with a total area of 54 square meters, taking into account the average annual aggregate family income). 6. The coefficient of migration gain (by 10 thousand people). 7. Crude birth rate. 8. Crime rate. 9. The quality and accessibility of housing and communal services (the

	<p>number of days with a failure to water, heat and electricity supply for an average per capita, the ratio of average per capita spending on housing services to the cost of a fixed set of basic consumer goods and services, the share of recycled solid municipal waste in the total volume of solid municipal waste, the proportion of the normatively treated wastewater in the total volume of wastewater).</p> <p>10. Dynamics of gross regional product per capita.</p> <p>11. The volume of fixed capital investment (except budgetary funds of the federal budget, investments in extractive industries) per capita.</p> <p>12. Integral index of the subject of the Russian Federation in the national rating of the state of the investment climate in the subjects of the Russian Federation.</p> <p>13. The ratio of the average number of employees of small business and medium-sized enterprises to the population.</p> <p>14. The density of the public road network (except federal roads) that meet the regulatory requirements for transport performance indicators.</p> <p>15. The volume of tax revenues of the consolidated budget of a constituent entity of the Russian Federation (minus: transport tax, mining tax, excise taxes on automobile and straight-run gasoline, diesel fuel, motor oils for diesel and (or) carburetor (injector) engines produced in the Russian Federation, profit tax and other payments in the performance of production sharing agreements, including payments for the use of subsoil, regular payments for the extraction of minerals (royalties), one-time income) per capita, adjusted for the index of budget expenditures.</p> <p>16. The ratio of the public debt volume of the Russian Federation constituent entity dated January, 1 of the year following the reporting year to the total annual income (excluding gratuitous receipts) of the budget of the subject of the Russian Federation.</p> <p>17. The share of overdue accounts payable in the expenses of the consolidated budget of the subject of the Russian Federation.</p> <p>18. The unemployment rate (according to the methodology of the International Labor Organization).</p> <p>19. The population's assessment of the self-realization conditions, including the children self-realization.</p> <p>20. The assessment of population's satisfaction with educational, health, culture and social services.</p> <p>21. The proportion of residents of the Russian Federation subject who faced corruption.</p> <p>22. The population's assessment of the activities of executive authorities of a constituent entity of the Russian Federation.</p> <p>23. The population's assessment of the activity effectiveness of the public authorities of the Russian Federation.</p> <p>24. The results of an independent assessment of the quality of service delivery by social organizations.</p>
<p>RF Presidential Decree 607 from 28.04.2008 'On assessment of efficiency of government bodies in urban regions and municipal units' (as revised in 14.10.2012, number of Decree 1384). The list of indicators of efficiency assessment of government bodies</p>	<p>1. Number of small and medium businesses per 10000 of population.</p> <p>2. Proportion of average staffing number (excluding external part-timers) in small and medium business to average staffing number (excluding external part-timers) in all businesses.</p> <p>3. Proportion of public auto-roads mileage that does not meet the requirements to the total mileage of local public auto-car roads.</p> <p>4. Proportion of population in inhabited localities without regular bus or railroad communication with the administrative center of the urban</p>

<p>in urban regions and municipal units. (The RF Presidential Edict 2008; 607, n.d)</p>	<p>district or municipal unit to total population of the urban district or municipal unit. 5. Proportion of lands taxable by land tax to total area of urban region or municipal unit. 6. Proportion of infants and children aged from 1 to 6 years registered for designation to municipal preschool to total number of infants and children of this age group. 7. Proportion of graduates of municipal general schools who successfully passed Uniform state exam in Russian language and mathematics to total number of graduates from these schools who took the exams. 8. Total area of housing per one citizen including houses put in service in current year. 9. Proportion of private companies that produce services in the sphere of public utilities (plumbing, electricity supply, heating etc.) owned by government by no more than 25% to total number of such companies that work in the territory of urban region or municipal unit. 10. Proportion of apartment houses built on territories included in State Immovable Property Cadaster. 11. Specific value of consumption of energy resources (electricity and heating energy, water, gas) in apartment houses (per 1 square meter or per 1 person). 12. Specific value of consumption of energy resources (electricity and heating energy, water, gas) in municipal public establishments (per 1 square meter or per 1 person). 13. Satisfaction of population with the work of local government bodies in urban district (municipal unit) (percent of respondents).</p>
<p>RF Government Regulation 1317 from 17.12.2012 with additions and corrections from 26th December, 2014 and 12th October, 2015. The list of additional indicators of efficiency assessment of heads of local government bodies (urban districts and municipal units). (The RF Government Decree 2012; 1317, n.d)</p>	<p><i>I. Economic development:</i> 1. Monthly average nominal salary of workers (in rubles) of: big and medium non-commercial businesses, municipal preschool educational facilities, municipal general schools, including teachers, municipal cultural and art establishments, municipal facilities of sports and physical culture. 2. Amount of investments in fixed capital (excluding public funds) per capita (rubles). 3. Proportion of profit-making agricultural organizations in their total number (percent). <i>II. Preschool education:</i> 4. Proportion of infants and children aged from 1 to 6 years receiving preschool education or sponsorship for it in municipal educational facilities in total number of infants and children aged from 1 to 6 years (percent). 5. Proportion of municipal preschool educational facilities the buildings of which are in critical condition or in need of repairs in total number of such facilities (percent). <i>III. General and supplementary education:</i> 6. Proportion of graduates from general municipal schools without diploma in total number of graduates of municipal general schools (percent). 7. Proportion of municipal general schools the buildings of which are in critical condition or in need of repairs in total number of such schools (percent). 8. Proportion of municipal general schools that meet modern standards</p>

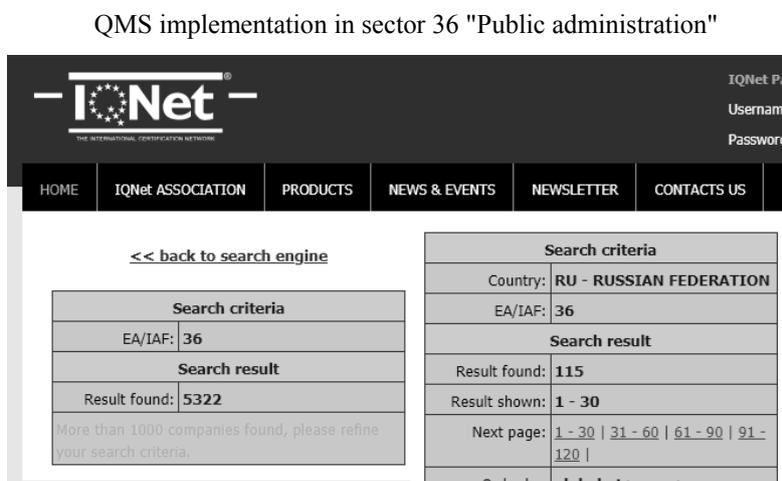
	<p>of education in total number of such schools (percent).</p> <p>9. Proportion of children of the first and second health groups in total number of pupils in general municipal schools (percent).</p> <p>10. Proportion of pupils in municipal general schools that attend second (third) school in total number of pupils in such schools (percent).</p> <p>11. Spending of public funds on general education per 1 pupil in general municipal schools (thousands of rubles).</p> <p>12. Proportion of children aged from 5 to 18 years that receive additional educational services in organizations of all types of legal forms and forms of ownership in total number of all children of this age group (percent).</p> <p><i>IV. Culture:</i></p> <p>13. Proportion of municipal cultural establishments the buildings of which are in critical condition or in need of repairs in total number of such establishments (percent).</p> <p>14. Proportion of municipally-owned cultural heritage sites in need of conservation or restoration in total number of such sites (percent).</p> <p>15. Factual funding ratio of cultural establishment of required level (percent): clubs, libraries, parks for recreation and leisure.</p> <p><i>V. Physical training and sports:</i></p> <p>16. Proportion of population that regularly engages in sports and physical training (percent).</p> <p>16.1. Proportion of students and pupils that regularly engages in sports and physical training in total number of students and pupils (percent).</p> <p><i>VI. Housebuilding and provision of housing:</i></p> <p>17. Proportion of land property for housebuilding for which no use permit has been issued for three years (for housing buildings) or five years (for other types of buildings)</p> <p>18. Land area for housebuilding per 10000 of population, including land property for housing buildings, individual building, and integrated residential development (ha).</p> <p><i>VII. Housing and utilities infrastructure:</i></p> <p>19. Proportion of apartment houses the owners of which selected and currently use one of the management methods in total number of apartment houses where owners have yet to select management method (percent)</p> <p>20. Proportion of the population that received new housing or improved living conditions in the report year in total population registered as in need of housing space (percent).</p> <p><i>VIII. Municipal administration:</i></p> <p>21. Proportion of the overdue accounts payable for labor compensation (including indirect labor charges) of municipal facilities in total volume of expenses of these facilities on remuneration of labor (including indirect labor charges) (percent).</p> <p>22. Proportion of tax and non-tax income of local budget (excluding tax income from additional sources) in total volume of own budget incomes of municipal unit (excluding subventions) (percent).</p> <p>23. Office expenses of the employees of local self-governing bodies spent from the budget of municipal unit per one citizen of the municipal unit (rubles).</p> <p>24. Capital fund of bankrupt businesses of municipal form of ownership in total capital fund of all such organizations (at the year-end, at gross book value) (percent)</p>
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	25. Constructed volume not finished in established period from resources of local budget (urban region or municipal unit) (thousands of rubles) 26. Presence of approved general plan of urban district (municipal unit) (yes/no). 27. Mid-year constant population (thousands of people).
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It is proposed to use quality management methods to improve the activity quality of the executive bodies of the subjects of the Russian Federation, local governments of urban districts and municipal districts. Methods of quality management can be applied in the following forms: quality management system in accordance with the requirements of ISO standards; models of self-evaluation according to the criteria of various quality awards; various rating estimates.

Today according to the International Certification Network IQNet (Iqnet-certification.com, n.d), more than 5,000 state and municipal authorities in different countries of the world use the QMS in their activities, while only 115 organizations use it in the Russian Federation (Figure 1). The pace of the QMS implementation in the public authorities of the Russian Federation is low, which can be explained by the fact that the ISO 9000 standards were initially oriented towards organizations that conduct commercial activities which doesn't fully reflect the specifics of the state and municipal service.

Figure 1



Since May 1, 2016 GOST R 56577-2015 "Government bodies' quality management systems: Requirements" has been introduced in order to improve the public services quality, aimed primarily at improving the life quality of the population of the country (GOST R 56577-2015, n.d). The standard's requirements are aimed at raising of the customer satisfaction and the degree of their trust to government bodies through the quality

management system effective application, including the processes of its continuous improvement, and ensuring compliance with customer requirements and relevant mandatory requirements. In the section "Terms and definitions" of this standard, the following interpretation of the term "top management" is given: an official or a group of officials carrying out a mandate of the authority. The section "Requirements to the management of the authority in the quality management system" contains practically the same requirements as the requirements to the management of commercial organizations, including: "The top management of the authority should ensure the availability of evidence of acceptance of its obligations to develop, implement, operate (keeping in working condition), as well as constant improvement of the QMS performance and efficiency. The authority top management should consider the development, implementation, maintenance and improvement of the QMS performance that meets the requirements of the standard as a strategic project."

The development of the ideas of quality management in the Russian Federation allows us to recommend the use of **author methods** for assessing and improving the QMS operational efficiency at the level of state executive bodies (Shmeleva Economic and management 2010). New quality management principles, reflected in the standard GOST R 56577-2015: "operativeness – self-analysis and self-development – transparency of activities – ethical behavior" also favor this proposal.

The methodology involves the development of a responsibility distribution matrix across the entire QMS process group "Management responsibility" (Table 5), as well as "role chains by departments" of this group of processes that transform traditional degrees of participation in the process (executor, responsible, matching, evaluation) by the following roles:

- the "sponsor" of the process;
- the "master" of the process;
- the auditor of the process;
- the participant of the process with indication of its importance for the process: (P1 – executes the operations of the process, consumes the resources allocated by the "sponsor" and distributed by the "master", P2 – is responsible for the results of the process to the "owner" and "sponsor" of the process, P3 – identifies inconsistencies and carries out continuous improvement of the process at his workplace, P4 – informs the "owner" about the progress and results of the process, the use of resources, inconsistencies and risks of the process. Based on expert assessments of the representative of quality management or external consultants, QMS companies are assigned weighting coefficients of the "role" of each division in a specific QMS process "Management responsibility". The weighting coefficient of the "role" of subdivision i in the administrative management of QMS y will be denoted as Ki_y . The sum of the weighting coefficients of the "roles" of the subdivisions for each process should be 1, i.e. $\sum Ki_y = 1$.

Table 5
Responsibility distribution matrix for the process group "Management responsibility"

The QMS process group "Management responsibility"	Participants of the QMS process group "Management responsibility"				Process-outcome indicators	
	Subdivision 1	Subdivision 2	Subdivision 3	General director	Planned I_{p_y}	Factual I_{f_y}
Providing evidence of commitment to the QMS development and implementation as well as continuous improvement of its performance	$K1_1$	$K2_1$	$K3_1$	$K4_1$	I_{p_1}	I_{f_1}
Identification and implementation of customer requirements to increase their satisfaction	$K1_2$	$K2_2$	$K3_2$	$K4_2$	I_{p_2}	I_{f_2}
Management of the policy in the field of quality	$K1_3$	$K2_3$	$K3_3$	$K4_3$	I_{p_3}	I_{f_3}
Management of quality objectives	$K1_4$	$K2_4$	$K3_4$	$K4_4$	I_{p_4}	I_{f_4}
QMS planning	$K1_5$	$K2_5$	$K3_5$	$K4_5$	I_{p_5}	I_{f_5}
Definition and bringing the responsibility and authority in the sphere of quality to the attention of the organization's personnel	$K1_6$	$K2_6$	$K3_6$	$K4_6$	I_{p_6}	I_{f_6}
Development of appropriate information exchange processes in the organization, including the QMS performance issues	$K1_7$	$K2_7$	$K3_7$	$K4_7$	I_{p_7}	I_{f_7}
Analysis of QMS organization at scheduled intervals	$K1_8$	$K2_8$	$K3_8$	$K4_8$	I_{p_8}	I_{f_8}

In order to assess the performance of each QMS process "Management responsibility", a plan-factual comparison of the actual measured output of the process and its planned value is made by the following formula (1):

$$P_y = I_{f_y}/I_{p_y}, (1)$$

where:

I_{f_y} is the actual measured quantity indicator of the process outcome;

I_{p_y} – planned target;

P_y – performance of the process y of the group "Management responsibility".

The assessment of the performance of a particular subdivision i in a particular process y "Management responsibility" (PSi_y) is carried out according to the formula (2):

$$PSi_y = P_y * K_{iy}, (2)$$

The evaluation of the performance of a particular subdivision i in all eight processes "Management responsibility" (TP i) can be represented by the following formula (3):

$$TPi = \sum_{y=1}^8 PSi_y, \% (3)$$

The obtained performance of each managerial subdivision across the whole process group is interlinked with the motivation system of management personnel, stimulating it to implement the quality strategy.

The assessment of the operating efficiency of the company's QMS can be represented by the formula (4):

$$AE_{QMS} = \frac{TAP_{MS}}{\% PF_{MR}}, (4)$$

where:

TAP_{MS} – the total average performance of all management subdivisions involved in the QMS processes "Management responsibility";

$\% PF_{MR}$ – the percentage of planned funds aimed at achieving the current level of total averaged performance of all management subdivisions involved in the QMS processes "Management responsibility".

To assess the QMS operating efficiency it is necessary to take into account the costs associated with the development, implementation, improvement of the administrative processes of QMS and the improvement of the management's competence in the sphere of quality. It is proposed to include into the costs such elements as the costs of developing, implementing and improving the administrative processes of QMS; costs to increase the top-managers' competence in the sphere of quality (taking into account current and future needs); guaranteed minimum wages for management personnel; bonus (%) for the results of the organization's work as a whole (including bonus for the QMS development); bonus (%) for the work of the department, incl. % for work on administrative processes of QMS (once a year); bonus (%) for individual contribution; (%) for the level and quality of work; (%) qualification; (%) for the QMS development (once a year); costs for management error eliminating (returns, claims).

This methodology has the following advantages in contrast to existing approaches to assessing the effectiveness of QMS:

- it is focused on the "chain of roles" of each QMS administrative process; the object of method management is a group of QMS processes "Management responsibility";
- the importance of top-managers in the QMS administrative processes is assessed using the weighting coefficient of participation of their "roles";

- it includes changes in the motivational component of the company's management, taking into account the weighting coefficients of its participation in the QMS administrative processes and processes effectiveness;
- it allows to evaluate the effectiveness of each process of the group "Management responsibility";
- it is aimed at evaluating and enhancing the professional competence of the company's management in the field of quality;
- it reflects the objective role and contribution of top-management into the implemented administrative processes of the QMS;
- it involves the accounting of costs associated with the development, implementation, improvement of the QMS administrative processes and increasing the management competence in the field of quality.

4. Conclusions

The application of this **author methodology of evaluating and improvement of the operating efficiency of QMS of state executive authorities** allows predicting the following effects:

- work improvement within the framework of the most problematic administrative processes of the QMS;
- improvement of the process of budgeting of managerial human resources involved in the administrative processes of the QMS;
- transformation of the motivational component of managerial human resources depending on the achieved performance indicators of administrative processes and QMS operating efficiency;
- increase of competitiveness (rating of management bodies of different levels) on the basis of increasing the performance of the group of QMS processes "Management responsibility".

In conclusion, it should be noted that it is extremely necessary to create a modern system of public administration in Russian public authorities working for the population and in the interests of the population, and effective working management is also needed to ensure the creation of values that satisfy consumers. The QMS and its continuous improvement based on the application of the methodology for assessing and improving the QMS operating efficiency (QMS processes groups "Management responsibility") can become one of these tools.

References

- The RF Presidential Edict 2018; 204: May 7. "On National goals and Strategic development tasks of the Russian Federation until the year 2024" [homepage on the Internet]. Available from: <http://publication.pravo.gov.ru/Document/View/0001201805070038?index=1&rangeSize=1>
- Programs.gov.ru [homepage on the Internet]. Available from: <https://programs.gov.ru/Portal/programs/reportIndicators?gpId=16&year=2017>
- Shmeleva, A.N. Kachestvo zhizni naseleniya RF i zdorov'esberegayushchie pokazateli [Population's Life Quality of the Russian Federation and health-saving indicators]. *Drukerovskij vestnik*. 2017; 4:30-44. Russian.
- Shmeleva, A.N. Vzaimosvyaz' pokazatelej kachestva zhizni naseleniya s pozicij ego obespecheniya v normativno-pravovyh aktah RF i «Rejtinga regionov RF po kachestvu zhizni» [Interrelation of the indicators of the population life quality from the position of its provision in the normative legal acts of the Russian Federation and the "Rating of the Regions of the Russian Federation for Life quality"]. *Innovation Management-2016. Collection of scientific articles of the international research-to-practice conference*. 2016:107-110. Russian.
- Shmeleva, A.N. Neobhodimost' povysheniya znachimosti zdorov'esberegayushchih pokazatelej v ocenke kachestva zhizni naseleniya megalopolisov [Need of increase of the importance health preserving indicators in an assessment of quality of life of the population of megalopolises]. *Quality and life*. 2016; 2(10):64-67. Russian.
- Final report of the expert group on quality of life indicators 2017 edition [homepage on the Internet]. Available from: <http://ec.europa.eu/eurostat/documents/7870049/7960327/KS-FT-17-004-EN-N.pdf/f29171db-e1a9-4af6-9e96-730e7e11e02f>
- Ranking of Regions of the Russian Federation for the life quality in 2017 [homepage on the Internet]. Available from: http://vid1.rian.ru/ig/ratings/life_2017.pdf
- M24.ru [homepage on the Internet]. Available from: <https://www.m24.ru/articles/%D0%B7%D0%B4%D1%80%D0%B0%D0%B2%D0%BE%D0%BE%D1%85%D1%80%D0%B0%D0%BD%D0%B5%D0%BD%D0%B8%D0%B5/28072016/111671>
- Nodelman, V. Uchenye rasschitali prodolzhitel'nost' zdorovoj zhizni na pensii [Scientists have calculated the duration of a healthy life in retirement]. *Izvestiya*. Available from: <https://iz.ru/685482/valeriia-nodelman/uchenye-rasschitali-prodolzhitel'nost-zdorovoi-zhizni-na-pensii>. Russian.
- Project "Interdepartmental Strategy for Healthy Lifestyle, Prevention and Control of Non-communicable Diseases for the Period until 2025" [homepage on the Internet]. Available from: https://www.gnicpm.ru/UserFiles/PROEKT_STRATEGII_NIZ-210616.pdf
- Shmeleva, A.N. Ocenka operacionnoj ehffektivnosti sistemy menedzhmenta kachestva. Kolichestvennye podhody k ocenke operacionnoj ehffektivnosti SMK predpriyatiya [The assessment of the QMS operating efficiency. Quantitative approaches to assessing of the QMS operating efficiency]. *Russian journal of entrepreneurship*. 2010; 9-2:57-63. Russian.
- Kachalov, V.A. Kommentarij ehksperta [Expert's comment]. *Business Excellence*. 2005; 4:14-18. Russian.
- Shmeleva, A.N. Ocenka i upravlenie operacionnoj ehffektivnost'yu SMK predpriyatiya [The assessment and control of operational efficiency of the company's QMS]. *Economic and management*. 2010; 12:147-153. Russian.
- The RF Presidential Edict 2017; 548: November 14. "On the assessing the activity effectiveness of the executive bodies of the subjects of the Russian Federation" [homepage on the Internet]. Available from: <https://www.garant.ru/products/ipo/prime/doc/71709662/>
- The RF Presidential Edict 2008; 607: April 28. "On the evaluation of the effectiveness of local self-government bodies of urban districts and municipal districts" [homepage on the Internet]. Available from: <http://base.garant.ru/193208/>
- The RF Government Decree 2012; 1317: December 17 [homepage on the Internet]. Available from: http://www.consultant.ru/document/cons_doc_LAW_139508/8bd9c4cf549e4ca44156462b6e96d30e6a3dfabd/#dst100023
- Iqnet-certification.com [homepage on the Internet]. Available from: <http://www.iqnet-certification.com/index.php>
- GOST R 56577-2015 "Government bodies' quality management systems: Requirements" [homepage on the Internet]. Available from: <http://docs.cntd.ru/document/1200124219>
- Ec.europa.eu [homepage on the Internet]. Available from: http://ec.europa.eu/eurostat/cache/metadata/en/hlth_hlye_esms.htm