Strategic management of public sector service quality based on the Social Progress Index Methodology

Gestión estratégica de la calidad de los servicios del sector público basada en la metodología del índice de progreso social

CHAPLINA, A.N. 1; DEMAKOVA, E.A. 2; GERASIMOVA, E.A. 3 & DEMCHENKO, S.K. 4

Contents

ABSTRACT:

Improvement of public sector service quality is now considered a requisite condition of national human capital accumulation and the key criterion of such quality is how well the results of service provision are aligned with the goals of social development. Addressing the quality of services as a determinant of social progress, the authors of conducted this research with a view to developing a methodology to identify and assess the factors characterizing various constituents of service quality. Factor identification was based on the Social Progress Index methodology taking into account government failures in the public economy. Statistical methods were used to assess the influence of the identified factors. As can be seen from the developed regression model of service quality in healthcare, only 37% of the positive effect from improvements in service provision can be explained by resource availability in the industry, while nearly two-thirds are attributed to cooperation factors, most importantly, public engagement in public management. The original methodology for calculating and assessing the effect of such factor first proposed in this paper may be used across the world and may prove instrumental in the development of an optimum strategy of public service quality management ensuring sustainable social progress in the environment of scarce resources.
Keywords: public sector services, social progress, quality management

RESUMEN:

La mejora de la calidad de los servicios del sector público se considera ahora una condición necesaria de la acumulación nacional de capital humano y el criterio fundamental de esa calidad es la adecuación de los resultados de la prestación de servicios a los objetivos del desarrollo social. Abordando la calidad de los servicios como factor determinante del progreso social, los autores realizaron esta investigación con miras a desarrollar una metodología para identificar y evaluar los factores que caracterizan a los diversos componentes de la calidad de los servicios. La identificación de los factores se basó en la metodología del índice de Progreso Social, teniendo en cuenta las fallas del gobierno en la economía pública. Como puede verse en el modelo desarrollado de regresión de la calidad de los servicios de salud, sólo el 37% del efecto positivo de las mejoras en la prestación de servicios se puede explicar por la disponibilidad de recursos en la industria, mientras que casi dos tercios se atribuyen a los factores de cooperación, lo más importante, la participación pública en la gestión pública. La metodología original para calcular y evaluar el efecto de ese factor que se propuso por primera vez en el presente documento puede utilizarse en todo el mundo y puede resultar fundamental para el desarrollo de una rápido óptima de gestión de la calidad de los servicios públicos que garantice el progreso social sostenible en el entorno de los escasos recursos.
Palabras clave: servicios del sector público, progreso social, gestión de la calidad

1. Introduction

With intensifying competition between countries and regions, one of the paths in sustaining national economic sovereignty is human capital accumulation promoted by the steady development of public sector services (Guenoun *et al.*, 2016). The core of such development is the quality improvement in public sector services (Pollitt & Bouckaert, 2011) reflected in the level of conformity of service provision procedures and results with public needs. Public sector service provision consists in the staged transformation of public resources, which are more or less limited in supply in any country.

Thus, the quality of public sector services depends on the availability and quality of the government's resources. On the other hand, it is determined by the efficiency of resource allocation between industries and their utilization in conditioning public sector service provision shaping the outcomes and consumer satisfaction (Cluzel-Métayer, 2006).

Government failures in managing social resources mean that there is no considerable improvement in terms of efficiency of operation where no cooperation with public sector service consumers occurs (Bherer, 2011). Such engagement may help to adjust the targets of service provision and find optimum managerial decisions as to the requirements to attracted resources and their attainment (Chaplina *et al.,* 2018). Therefore, quality improvement in public sector services and, as a result, stable social progress require methodological tools to identify and manage key factors of development of individual industries based on the analysis of statistically reliable and sufficient data on their results and the degree of conformity with the attainment of targets of social development (Cluzel-Métayer, 2006). The purpose of this research was to test the hypothesis of how the quality of public sector services (as a determinant of social progress) is influenced by the factors characterizing resource availability, the efficiency of use and the level of cooperation of service consumers with the government.

2. Methods

The information and methodological basis chosen in the development of assessment tools for the factors of public sector service quality and the determinants of social progress was the *Social Progress Index* (SPI), a comprehensive gauge of public prosperity levels attained by countries (Stern *et al.*, 2018). Apart from comparisons between countries or historical trends in individual countries, the SPI, representing 51 indicators of social progress in various aspects of public life, helps to assess correlations between individual indicators of economic and social development. SPI comprises three key criteria: basic human need satisfaction, foundations for prosperity and human development.
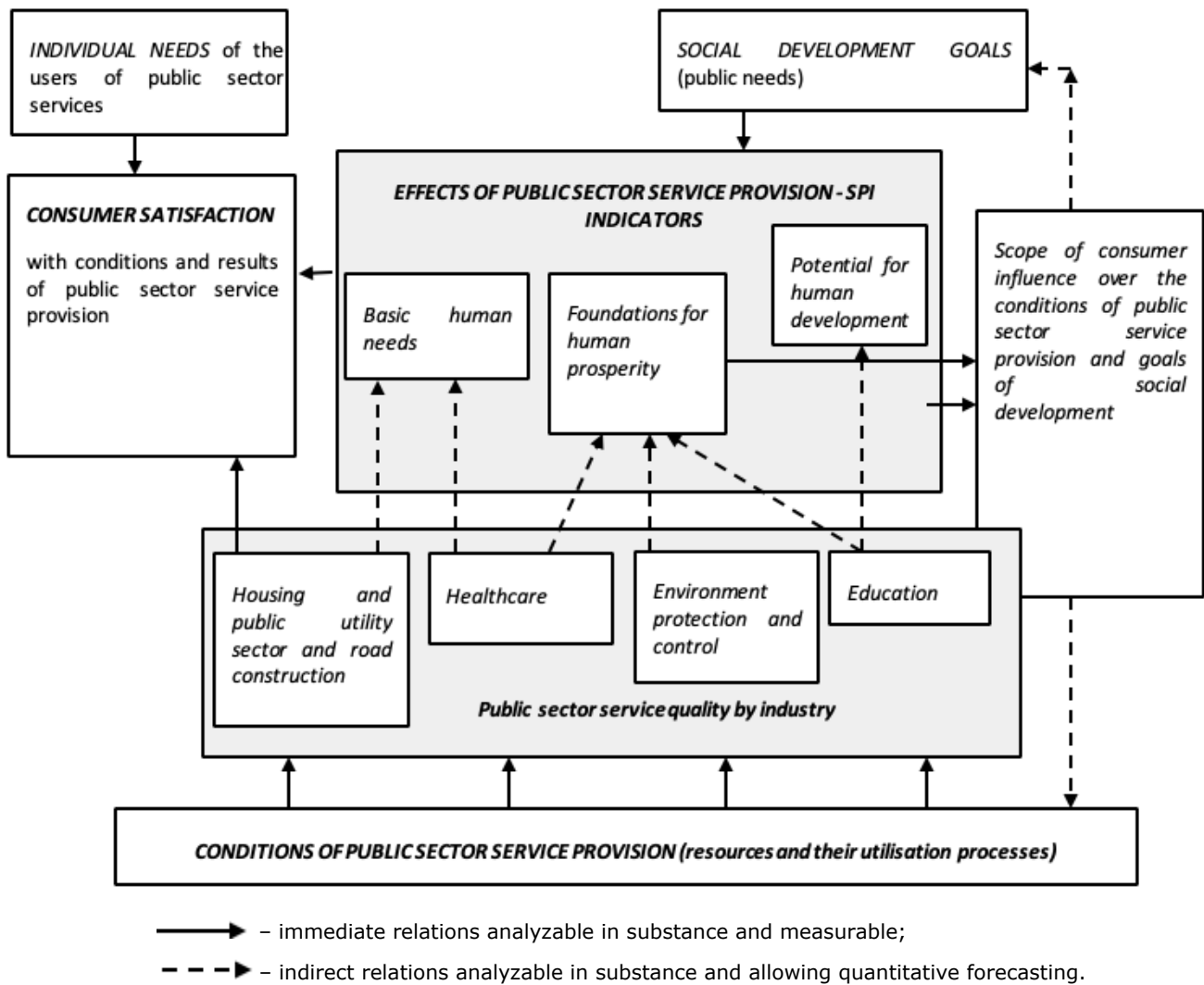
The influence of quality conditions in service provision over the performance indicators in the SPI structure should be established as part of the development of corrective management decisions to address the most profound government weaknesses in promoting social progress. Apart from the links to the quality of services in individual industries, the analysis in the substance of these indicators helped to establish a special group of those among them that are indicative of the consumers' potential to influence both the conditions and results of public sector services (Figure 1). *Public sector service quality should be understood as the degree of conformity of the conditions (process characteristics) and results of service provision with consumer needs and the goals of social development*.

The proposed approach is to use the SPI to identify the determinants of performance levels of services in individual industries, while also focusing on government failures in the public domain of the service sector (Fender *et al.*, 2018).

An analysis of the SPI values for different countries shows a direct dependence of this index on the respective per capita GDP adjusted for purchasing power parity. However, the relation is not linear: for the group of countries with relatively low per capita GDP, the growth of the latter indicator is slower compared to that of the SPI index. Further advanced growth in the per capita GDP (above 15-20% of the level of advanced economies) generates slower relative increases in the SPI. There are two points here. First, *per capita GDP should be considered among the determinants of individual and aggregate indicators of social progress in terms of the underlying resource availability*. Second, country data assessment for this factor should be analyzed in differentiated aggregate groups reflecting the levels of the relative growth of per capita GDP and the SPI.

Figure 1
Influence of the quality of public sector services (by industries)
on consumer satisfaction and social development indicators

- immediate relations analyzable in substance and measurable;

- - - indirect relations analyzable in substance and allowing quantitative forecasting.

Given the complex structure of the SPI reflecting various aspects of public sector services (education, healthcare, housing and road improvement, law enforcement, etc.), one may assume that the integral value of the SPI reflects the positive societal effect from allocating national resources in the above sectors (Fig. 1).

As long as there is no comprehensive data on the spending volumes of individual states on the complete supply of all public sector services, it would be practicable to introduce an indirect gauge for the efficiency of allocation of the GDP to meet the requirements of different economic sectors, including public sector services (Fleurbaey & Blanchet, 2013). Such gauge is proposed to be measured as the relation of the country's per capita GDP to the attained SPI for the year referred to as the **resource utilization inefficiency index**. The index shows the amount of per capita GDP (in thousand USD) spent to achieve one unit of positive societal effect (as part of the complex assessment of all aspects of social progress). Thus, the proposed gauge *serves as a determinant of individual and aggregate indicators of social progress in terms of the efficiency of government (as an investor and economic regulator) in managing the processes of national resource utilization, particularly public resources*.

The key target of social development, i.e. human need satisfaction, can only be reached by efficient cooperation between the government and the public, where the latter should help to identify such needs, assess the levels of their satisfaction, set priorities and instruments of improvement. Specific characteristics of the public sector shape the need to supplement the consumer (private) model of quality of public sector services by introducing legal (public) aspects based on the principles of transparency, engagement and equality (Sabadie, 2003; Goudarzi & Guenoun, 2010). The realization of these principles in conditions established in a country for mutual engagement of the government and the public is reflected in several SPI indicators, which, by way of factor analysis, can be aggregated into the **index of public engagement in public management** *and considered as the third determinant of the effects of social progress in terms of the scope of public participation in managing the quality of public sector services.*

When the factors have been identified, their influence should be assessed for groups of social development outcomes shaped by the quality of public sector services in individual sectors.

To aggregate indicators measured on different scales into a *complex indicator of performance in services*, the first step should be their standardization for the group of analyzed countries with similar ratios of relative growth rates of SPI and per capita GDP.

Further correlation and regression analysis will help to assess the degree of influence of the identified factors (independent variables) on the *quality of public sector services as the degree of conformity of the attained results with the goals of social development* (response variable).

3. Results

The evaluation of the proposed assessment methodology concerning factor influence on the quality of public sector services and the results of social progress was conducted for the Russian Federation and the sector of healthcare.

A comparison of the SPI constituents influenced by the quality of healthcare services (2018 Social progress index, 2018) in Russia with their respective average values in the group of leading countries (Table 1) shows multifold underperformance in the level of satisfaction of basic human needs, e.g. the indicator of growth retardation in children in Russia exceeds the average of the leading countries by 6.1 times; the coefficients of maternal and infant mortality are higher by 2.8 and 2.2 times respectively and mortality rate due to infectious diseases is higher by 2.1 times.

Table 1
Influence of healthcare quality on
the indicators of the SPI in 2018

SPI indicator	Average value for the group of leading countries	Value for Russia	Variation of the value for Russia compared to the average for the group of leading countries, ±%
1. Maternal mortality rate (deaths per 100,000 live births)	5.93	16.79	+183.14
2. Infant mortality rate (mortality per 1,000 live births)	3.52	7.7	+118.75
3. Growth retardation (% of children)	1.64	10.08	+514.63
4. Mortality rate due to infectious diseases (deaths per 100,000 people)	20.17	41.60	+106.25
5. Life expectancy after the age of 60 (years)	24.43	18.97	-22.35
6. Premature mortality due to non-communicable diseases in the age bracket of 30 to 70 (deaths per 100,000 people)	209.48	598.21	+185.57
7. Accessibility of major healthcare services preventing diseases bearing high mortality risks (on a scale of 100)	82.13	63.09	-23.18
8. Accessibility of quality healthcare (on a scale of 4)	3.61	2.79	-22.71

To assess factor influence on the quality of healthcare services in Russia described by eight SPI constituents (as shown in Table 1), 74 countries were selected from the first, second and third

groups identified in the 2018 Social Progress Imperative project.

To calculate the response variable describing the quality of healthcare services, the values of SPI constituents measured on different scales were standardized. If an increase of the indicator suits the development goals, the calculation of standardized n-th indicator in the i-th country p_{sn}^i is conducted as follows:

$$p_{sn}^i = \frac{p_n^i \times 100}{p_n^{max}} \ (1),$$

where p_n^i is the value of non-standardised n-th indicator in the i-th country;

p_n^{max} is the maximum value of non-standardised n-th indicator in the analysed group of countries.

Where the development goals are suited by declines in the n-th indicator in the i-th country, the following formula is used for standardization of such indicator p_{sn}^i:

$$p_{sn}^i = \frac{(p_n^{max} - p_n^i) \times 100}{p_n^{max}} \ (2).$$

Eight standardized indicators of the i-th country should be aggregated into a complex performance indicator of services P^i according to the equation of arithmetic mean:

$$P^i = \frac{\sum p_{sn}^i}{N} \ (3).$$

The next step is the utilization of the three previously substantiated factors for further assessment of their degree of influence on the results of social development depending on the quality of public sector services in the respective sector.

The first factor determining the indicators of social progress in terms of underlying resource availability is expressed based on the *per capita GDP* in the i-th country W^i.

The second factor determining the indicators of social progress in terms of efficiency of government management *referred to as the resource utilization inefficiency index* U^i for the i-th country is calculated according to the formula below:

$$U^i = \frac{W^i}{SPI^i} \times 100 \ (4),$$

where SPI^i is the value of the SPI in the i-th country;

W^i – is the per capita GDP figure officially published by the Social Progress Imperative research group for the i-th country.

The third factor referred to as the *index of public engagement in public management* G^i was developed by the method of factor analysis using the SPSS Statistics software. The following factor weights were identified for the respective SPI indicators:
—   the share of internet users: 0.756;
—   the level of public engagement in operational electronic management: 0.406;
—   access to independent media (% of the population): 0.764;
—   freedom of speech of the media and the public: 0.763;
—   the level of perceived corruption in the public sector: 0.819;
—   fair access to political power for people from different socioeconomic backgrounds: 0.717;
—   fair access to political power for people from different social groups: 0.766.

The assessment of correlations between the above indicators and factor weights allowed eliminating the indicator reflecting "the level of public engagement in operational electronic management" from further calculations of the factor's own value. A Cronbach's alpha coefficient of 0.844 indicates a high level of internal consistency of the selected indicators (Bland & Altman, 1997). The aggregate variance in indicators accounted for by the isolated factor equaled 59.092, and the level of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.726, indicating sufficiently reliable presentation of the resultant factor by the sampled indicators.

Further correlation and regression analysis using the SPSS Statistics software helped to assess the degrees of influence for the three identified factors (independent variables W^i, U^i and G^i) on the *quality of healthcare services reflecting the level of conformity of the attained results with the goals of social development* (response variable P^i).

The resulting multiple linear regression equation is as follows:

$$P^i = 68{,}374 + 0{,}395 \times W^i - 20{,}765 \times U^i + 0{,}143 \times G^i \text{ (5)}.$$

The coefficient of determination $R^2 = 0.741$ indicates that approximately 75% of the variance in the response variable describing the quality of healthcare services is accounted for by the variance of the sampled factors. The Durbin Watson (DW) statistic equals 1.670 and falls in the middle of the acceptable range $1.54 < DW < 1.71$, which indicates that there is no autocorrelation in the constituents of the developed model.

Sufficient significance of the resulting regression coefficients is confirmed by t-statistics, each with a significance level below 0.05. Thus, the developed model quite adequately represents the dependence of healthcare service quality on three major factors reflecting resource availability, the efficiency of their utilization and public engagement in management processes.

4. Discussion

A specific feature of the developed factor influence model of the quality of healthcare services as measured by a performance indicator lies in that one of the factors, the resource utilization inefficiency index , shows a negative relation to the response variable. Therefore, factor influence evaluations should include both the positive changes, such as growing values for the first and third variables (and) and declines in the second variable .

An analysis of the standardized regression coefficients and coefficients of elasticity for the model (6) showed that an increase of 10% in the average per capita GDP and the index of public engagement would lead to increases in the performance indicator of healthcare services of 1.38 and 1.49% respectively. Meanwhile, a decline in the resource utilization inefficiency index by 10% produces an increase in the performance indicator of healthcare services of 0.91%.

Thus, a simultaneous and proportionate improvement (by 10%) in all three factors determining the quality of public sector services (healthcare) would imply a forecast improvement in the service performance level by 3.78% on average. It is worth noting that only about 37% of the estimated increase would be due to improvements in resource availability, and for the remaining part, positive forecasts would be dependent on the management factors, namely, declines in resource utilization inefficiency and increased levels of public engagement in managing the quality of public sector services.

Taking into account statistical errors of the regression model, the authors adjusted the above-average estimates of contributions of each factor in healthcare performance in respect of the values for Russia in 2018:

- per capita GDP: 24.4166 thousand dollars;
- resource utilization inefficiency index: 0.35;
- index of public engagement in public management: 59.40.

Meanwhile, the calculated performance indicator for healthcare services in Russia based on the SPI data equaled 77.91 (on a conventional scale of 100), while calculations under the regression model produced a somewhat elevated score, 79.23. Both values of the performance indicator of healthcare services are considerably below the average score of the top three countries in the SPI ranking (88.8). Thus, healthcare quality improvement is one of the urgent problems in Russia. However, solving this problem solely in an extensive manner, by increased input of resources, might be only possible with a twofold increase in the per capita GDP. With the forecast average rates of annual GDP growth of approximately 2% according to the International Monetary Fund, that would take more than four decades to achieve.

However, the findings of the analyzed regression model (factor analysis of the quality of healthcare services) would help to design an optimum management strategy for such factors and attain the average of the first, second and third country groups (in the SPI ranking) within a five-year period. Such approach to optimization is based on the assumption that management input intensity should be proportionate to the contribution of the respective factor in the service performance indicator and the degree of underperformance in the factor value itself compared to the reference level:

- 0.315 for the resource utilization inefficiency index, which is the average level of the country group proposed by the Social Progress Imperative project as a potential benchmark for Russia to identify its strengths and weaknesses in sustaining social progress;
- 88.8 for the index of public engagement in public management, which is the average level for the first, second and third groups of countries in the SPI ranking.

Thus, systemic management of the analyzed factors with a view to annual improvement in their values by 2% in terms of per capita GDP and the resource utilization inefficiency index and 10% in the index of public engagement in public management would imply forecast growth in the performance indicator in healthcare services by 1.49% per year, or 7.44% over a five-year period.

5. Conclusion

The developed methodology for the assessment of factor influence on the quality of public sector services in terms of attainment of the target performance outcomes shows the need for not only investment growth in the respective industries but also improved the efficiency of public cooperation. Considerable influence is established to be exerted by the cooperation of the government (as an investor and consumer of services) with service providers in the optimization of the forms and methods of attracting and utilizing resources. However, an even stronger influence on the quality of social services is produced by the engagement of the public in decision-making and managing social resources.

The impact of the identified factors for the results of social progress (operating as public sector service quality) is not uniform for groups of countries with different levels of per capita GDP. The authors have shown statistically that with increasing resource availability in a country, the role of public cooperation with authorities in the attainment of the targets of social development and prosperity is growing. Systemic management of such cooperation would produce a greater effect than a direct investment in the social sector. The above conclusion particularly applies to countries identified by the Social Progress Imperative research as registering a stagnation or even a decline in the indicators of public engagement in public management.

This completely applies to Russia, which ranked 60th according to the 2018 SPI and belonged to the third of the six groups of countries by the index values arranged in the diminishing order. Besides, Russia shows significant underperformance by the indicators characterizing the scope of public engagement in managing the quality of public sector services, with a lag of 55-65% compared to the group of leading countries in the following dimensions:

- the level of perceived corruption in the public sector;
- freedom of speech of the media and public;
- access to independent media;
- fair access to political power for people from different socioeconomic backgrounds.

The complex of management steps aimed at improvement of institutional conditions shaping the above-mentioned indicators would help in bringing up public engagement in public management in Russia. The findings of the research show that this factor is now a priority in sustaining stable quality improvement in public sector services and, consequently, the indicators of social progress.

Bibliographic references

2018 Social progress index. (2018). Executive Summary. Retrieved from: www.socialprogress.org/assets/downloads/resources/2018/2018-Social-Progress-Index-Exec-Summary.pdf

Bherer, L. (2011). Les Relations Ambiguës Entre Participation et Politiques Publiques. *Revue Participations, 1*(1), 105-133.

Bland, J.M. & Altman, D.G. (1997). Cronbach's Alpha. *BMJ, 314*(7080), 572.

Chaplina, A.N.; Demakova, E.A.; Krotova, I.V. & Gerasimova, E.A. (2018). Managing Resource Support of the Quality of Services in the Public Sector: Methodology of Optimization. *Problems of Modern Economics, 2*(66), 224-229.

Cluzel-Métayer, L. (2006). *Le Service Public et L'exigence de Qualité*. Paris: Dalloz-Sirey.

Fender, D.; Porter, M.E. & Stern, S. (2018). The Empirics of Social Progress: The Interplay between Subjective Well-Being and Societal Performance. *AEA Papers and Proceedings, 108*, 477-482.

Fleurbaey, M. & Blanchet, D. (2013). *Beyond GDP: Measuring Welfare and Assessing Sustainability*. Oxford: Oxford University Press.

Goudarzi, K. & Guenoun, M. (2010). Conceptualisation et Mesure de la Qualité des Services Publics (QSP) Dans Une Collectivité Territoriale [Conceptualization and measure of Public Services Quality (PSQ)]. *Politique et Management Public, 27*(3), 31-54.

Guenoun, M.; Goudarzi, K. & Chandon, J.L. (2016). Construction and Validation of a Hybrid Model to Measure Perceived Public Service Quality (PSQ). *International Review of Administrative Sciences, 82*(1), 208-230.

Pollitt, C. & Bouckaert, G. (2011). *Public Management Reform: A Comparative Analysis*. Oxford: Oxford University Press.

Sabadie, W. (2003). Conceptualisation et Mesure de la Qualité Perçue d'un Service Public. *Recherche et Applications en Marketing, 18*(1), 1-24.

Stern, S.; Wares, A. & Epner, T. (2018). *2018 Social progress index*. Methodology Summary. Retrieved from: www.socialprogress.org/assets/downloads/resources/2018/2018-Social-Progress-Index-Methodology.pdf

1. Institute of Economics and Trade, Siberian Federal University, Russia, achaplina@sfu-kras.ru
2. Institute of Economics and Trade, Siberian Federal University, Russia, evdemakova@ya.ru
3. Institute of Economics and Trade, Siberian Federal University, Russia, elenasvo@mail.ru
4. Institute of Economics and Trade, Siberian Federal University, Russia, demchenko.svet@mail.ru

[Index]

[In case you find any errors on this site, please send e-mail to webmaster]

revistaESPACIOS.com