Social Filters in Assessing Higher Education Services Market

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ABSTRACT

The main goal of this work is to reveal social filters in the system of assessing the higher education services market. On the basis of the institutional interpretation of market relations, mechanisms and features of asymmetries formation in the educational services market are investigated. The role of the institutional environment ensuring processes of the man inclusion in the market relations was determined. The conceptual provisions aimed at the social filters theory development and the possibility of their use in the higher education services market operation in the region were justified. The institutional interpretation of higher education services market. Conceptually, from the neoclassical economics viewpoint, any market can be presented as a price mechanism for supply and demand regulation, providing a balance through free competition between independent and rational market participants. Such an understanding of the market causes more and more debates and stimulates many alternative models design. The orthodox neoclassical theory was subjected to the most consistent criticism by the institutionalism, which resulted in developing the original independent economic theory. The most important difference between institutionalism and neoclassical theory is in the interpretation of the economic processes organization and regulation mechanisms.

Introduction

In accordance with the institutional interpretation, the resources allocation mechanism is not the market in its pure form, but the institutions that form and operate through the market (Akerlof, Spence & Stiglitz, 2001).

The institutional concept application directly to the educational services market determines the need to study, first of all, its participants' actions to realize their own interests. (Osteen, 2011). According to the institutional approach, "the game rules" in the market, first, set the continuous interaction between organizations as "educational services" buyers and sellers. Second, the competitive interaction processes form all the market actors' needs and incentives to invest skills and knowledge that allow "not only to survive", but possibly, to get maximum benefit.

The institutional approach defines the educational services market as a set of relationships (Rokeach, 1973) including all the system of conditions, factors, institutions, concerning implementation of the interests of applicants seeking to gain knowledge and a certain social status (Matthews & Ross, 2010), and their "owners" demanding the applicant's quality for a particular "study place" (Porta & Diani, 2006). Such a broad interpretation of the institutional approach predetermines the need to systematize, thus allowing to streamline various elements of the economic relations determined by "the game rules" and restrictions in the educational services market.

The institutional environment of the higher education services market shall mean an ordered set of institutions creating the preferred models of the higher education services buyers' and sellers' economic behavior.

Literature Review

The term "filter" in the economic science originated in the 1970s of the 20th century in the human capital theory. The "filter theory" founders argued that education was a special mechanism separating people according to the ability level. This information helps to identify the most promising applicants in the labor market. Thus, higher labor productivity is associated not with employees' education, but with their personal abilities, existing before and apart from it, and that it simply makes explicit (Spence, 1974; Spence, 1980). The central idea of M. Spence's (1974) theory is highlighting not a productive, but a selective (information) education function. At the same time, the educational service includes three components: content, information and comfort.

Review of publications on the subject showed that the term "filter" in the economic literature does not have an unambiguous definition. Some scholars regard a filter as a selective signal (Bekker, 2003), others as a social orientation barrier or an economic orientation barrier. In the Russian education system a filter is considered as qualification test, which suggests that the student is ready to transit to the next stage of the education system. At the present stage, economists began to talk about the filter theory or signal theory as the correct understanding of the education economics (Bok et al., 2016). A social filter meant a unilateral mechanism for excluding applicants who are not able or not worthy to occupy vacancies. Such Western scholars as M. Spence (1974) and others pursued the social filters theory. An economic filter means obstacles imposed by the state, economic entities to their competitors, difficulties in carrying out unwanted types of activity. Barriers are in the form of taxes, excises, customs duties, price constraints, production, sales, import and export volume quotas, certification requirements, licensing (Alsted, 2005). In the authors' opinion, it is most reasonable to consider filters in the higher education services market as a system of filters, including social, economic, administrative and political factors that will determine the industry market capacity, including higher education, and the demand level in the labor market. Social factors include demographics, living standards, higher education prestige and parents' preferences, cultural traditions and residence place features, previous education quality (Nort, 2015).

Research Methods

Features of functioning of the higher education services market as a social institution are associated with the regional factors inclusion in the labor market. The authors understand the term "region" as a part of the territory allocated on the basis of the general characteristics of the combined natural and geographic, social and demographic, economic, administrative relationships, corporate culture, influenced by the historical conditions. In this context, the authors identify the "territory" and "region" concepts (Knight, 1947).

With due account for these clarifications in relation to the territory it is possible to distinguish its system features defining the higher education services market peculiarity in the region and affecting the market relations transformation, largely, their uniqueness. A region is a complex, open semistructured system, characterized by the presence of a large number of links, often formed in the conditions of uncertainty and ambiguity; a multi-purpose non-homogeneous system in which a subjective factor is of considerable importance, which is often a source of conflict strategies aimed at ensuring the conditions of reproduction and life-support systems; it has its own history (Moosmayer & Siems, 2012), its relatively independent life cycle, adaptive evolution, corporate culture, which is reflected in the attitude of the population to higher education; it consists of many sub-systems, the most important of which are population, economy, ecology, geopolitical space, different resource systems, institutions, characterized by the hierarchical control and activity of its separate subsystems interacting with the environment (Martens, 1994).

The novelty of the work is that of the entire set selected by the institution, affecting the the institutional environment of the educational services market, the authors will consider only two of them - the educational services market and the labor market. For this purpose, they will consider the possibility to use the social filters theory for the market research using the example of the higher education services market.

The research allowed to achieve significant theoretical results. From a practical point of view, the research gives interesting material on the basis of which it is possible to assess the higher education services market.

Results and Discussion

There are various classifications of institutions, which are not uniform in their nature. First of all, institutions are divided into two large groups: systemically important institutions, which determine the economic order type (first-order institutions) and institutions that make up a particular system (second-order institutions).

Among the most important systemically important institutions that form the institutional environment of the educational services market in the region, are: 1) systemically important institutions: economic, political and legal institutions, industrial complex (Neuman, 2013); 2) institutions that make up the higher education services market systems: education as a social institution, labor market, health, family, and culture.

Of the variety of institutions affecting formation of the institutional environment of the educational services market, the authors will consider only two of them - the educational services market and the labor market. For this purpose, they will consider the possibility to use the social filters theory for the market research using the example of the higher education services market.

Social filters in the higher education services market system. A social filter generally means a unilateral mechanism allowing people corresponding to the requirements and sorting out unsuitable ones (Shkurkin, 2011). A social filter is a set of the existing barriers on the social movement way, determined by the institutional environment, as a result of which there is a social selection of real or potential applicants for acquiring a well-defined social status, hierarchized in the social space.

Social filters have a rather complicated structure, and selection of applicants is usually carried out by several and sometimes, various factors. It allows to talk about the social filter structure, which has an "input stream", "output stream", constituent elements: criteria, values, sanctions (Tihonova, 2014).

A "vacant study place" where an "educational service" is consumed serves as a social status position in the higher education services market. Two main processes are associated with each study place identified in a particular higher education institution. On the one hand, a flow of educational services purchasers competing with each other, is formed. On the other hand, an educational service involves the accumulation of the competitive resource potential of the higher education institution: academic teaching staff and their qualifications; study place equipment; infrastructure; institution status; demand in the labor market in relation to competencies obtained at the higher education institution and their quality; features of the region where the higher education institution is located, and many other elements.

All these processes create the institutional environment that forms competitiveness of the higher education institution in the higher education services market, and they also define the social filters peculiarity at the entrance to the higher education institution.

Every social institution affecting the institutional environment of the higher education services market, makes its "contribution" to the social filter functioning (Bryman, 2012).

A filter which creates an integral barrier by the only institution on the applicant's movement way to a "vacant study place" will be called the social market filter (abbreviated - sofitr). Along with the social market filters, there are many barriers (called - asofitrs) in the way of accumulation of such individual skills and strategies, all of which could allow in the future to successfully overcome the obstacles on the way of efficient integration into the educational process in accordance with the individual value preferences.

In this sense, the market can be represented as a system of interconnected filters - sofitrs and asofitrs. On the one hand, social institutions included in the institutional environment of the market, form the "accumulation game rules", as a result of which "players" (real and potential market actors) are differentiated in the hierarchic market clusterings (spheres) in accordance with the accumulated human capital. Thus, human capital quality, structure and value of each potential or actual labor force seller in the labor market is an important condition and criterion to overcome market barriers. But through the asofitr system, at this stage there are obstacles to the competitive human capital accumulation.

On the other hand, these social institutions form the "overcoming game rules", as a result of which each market actor faces obstacles (sofitr) on the way of the successful implementation of the accumulated human capital.

Every social institution, included in the institutional environment of the region in relation to the market performs two things - accumulation and overcoming, that are implemented in the two interrelated social filters - sofitr and asofitr. This, to a certain

extent, dichotomous pair of social filters, which is defined by the integral function of each institution, is called a local social filter of the labor market (sofit). The same institution integral function forms both a sofitr and asofitr, each of which constitutes one of the two components of a sofit. Functions of any institution are aimed at meeting the socially important needs in the society (Eccles & Barber, 1999). This also applies to the integrated functions, in relation to which it is possible to speak about an integrated human need (Hanson, 2014) (to make a successful career, to get higher education, to acquire a particular profession, to work in a certain area, etc.).

Simultaneously, an institution builds formal and informal rules, implementation of which creates preconditions for the successful implementation of the individual needs meeting strategy. Each individual's integrated need located within this institution area, is surrounded by a sofitr and asofitr, or what is the same, the need is isomorphic in relation to a sofit.

The generality of the institution integral function is (under certain conditions) a prerequisite for sofitr and asofitr symmetry. For example, the need for good health as a prerequisite for successful study and future employment is accompanied by the rules under which this requirement is satisfied. These rules create a barrier on the way to satisfaction of this need related to the need for healthy eating, material well-being, good environment, right living, and many other conditions that determine a certain amount of health in the total human capital quality. In this case, an asofitr is a barrier that prevents formation of a particular element of the human capital. From the market viewpoint, an integrated health quality characteristic (as a reflection of the health institute integral function) determines its "price" in the market, which determines features of a sofitr of this type.

Carving out the actual cost of a specific component of the human capital and determining its value equivalent is a fairly complex, independent problem (Nikkar-Esfahani, Jamjoom & Fitzgerald, 2012).

Here, the authors note that the sofitr and asofitr symmetry is determined by the results of their functioning, i.e., by the number of applicants who have the required quality level of the corresponding human capital indicator, and are able to overcome barriers of the sofitr of this type.

The concept of "sofitr" introduced by the authors, enables to consider the applicants selection process for acquiring educational services from the social filter theory viewpoint. In this sense sofitr can be considered as a social filter unit cell, which is an actually existing local market filter. Thus, a social filter considered by the authors, which reflects the integrated function of a particular institution may be treated as a local sofitr (Sc, i), forming the only barrier on the way to getting the educational service defined by the applicant's i-th characteristic.

All the variety of local sofitrs is an integral sofitr, which can be interpreted as an educational services market sofitr (Sc). Perhaps, one can speak about the market as a single social filter, the structure of which depends on numerous combinations and interactions of its constituent sofitrs. In contrast to a local social filter, a market sofitr includes all sets of barriers formed by all social institutes included in the institutional environment of higher education services market in the region: level and quality of health and secondary education, vocational guidance, personal mobility, involvement in social networks, etc.

Similarly, it is possible to define an "integral asofitr" of the labor market (Sa), which is a collection of all asofitrs (Sa, i), formed by all institutes of the institutional environment.

In general, the total higher education services market consists of a set of sofitrs and asofitrs: (1), (2), (3), each of which under the influence of the institutional and external market environment, acquires particular characteristics.

To complete the higher education services market definition, the athours introduce the formalized expression of the institutional (Ic) and external (Gc) environment, which are, respectively, a set of institutions ({Ic, i}) and a variety of external environment factors ({Gc, i}).

$$S_c = \{S_{c,1}, S_{c,2}, S_{c,3,\ldots}S_c, n\} = \{S_{c,i}\}, i = 1,2,3,\ldots,n$$

(1)

$$S_a = \{S_{a,5}, S_{a,2}, S_{a,3,\ldots}S_a, n\} = \{S_{a,i}\}, i = 1,2,3,\ldots,n$$

(2)

$$S = \{S_c, S_a\}$$

(3)

$$I_c = \{I_{c,1}, I_{c,2}, I_{c,3,\ldots}, I_c, n\} = \{I_{c,i}\}, i = 1,2,3,\ldots,n$$

(4)

$$G_c = \{G_{c,1}, G_{c,2}, C_{c,3,\ldots}, C_c, n\} = \{G_{c,i}\}, i = 1,2,3,\ldots,n$$

(5)

$$\mathbf{R} = R(S_c, S_a, S, I_c, F_c)$$

(6)

In the system of notations introduced by the authors (1) – (6), the higher education services market in the region can be represented as a certain functional, which variables are sofitrs, asofitrs, institution functions and external environment factors:

$$\mathbf{R} = R(S_c, S_a, S, I_c, F_c)$$

(7)

With due account for these features, the authors formalize social filters, as applied to the higher education services market and consider their peculiarities in the Russian Far East.

Measuring social filters of the higher education services market. By analogy with the filters used in technical systems, the authors consider the main possible characteristics of a social filter: capacity, reliability, efficiency (effectiveness), processing (institutional) complexity, limits to applicability.

The social filter capacity is determined by the multiplicity and complexity of the barriers on the way of social movements to the hierarchized social statuses. With regard to the educational services market, this indicator represents a balance between different requirements, which are set by market actors, and their comparability, consistency. As a result of the social filter "work", there is a step-by-step separation of applicants competing in the educational services market for a quite definite study place (Volchik, 2000). The "sediment" formed within a certain time t (a number of applicants for study places who do not meet the specified formal and informal requirements for

applicants) - a consequence of the system interaction between all institutions included in the institutional environment. The resulting asymmetries are determined by various factors of the institutional environment of the educational services market.

The social local market filter sediment is the difference between the input and output streams. The ratio between the number of students (n_k) and the number of applicants in the "sediment" (not selected - no) characterizes the social market filter capacity, as applied to specific higher education institutions (M_i):

$$M_i = 1 - \frac{n_k}{n_k + n_0},$$ (8)

where i = 1, 2...., n - higher education institutions, $0 \leq M_i \leq 1$

One can talk about the capacity of the social filter of the aggregate market (e.g., of a city, region) (M_c):

$$M_c = \frac{\sum_{i=1}^{n} M_i}{n},$$ (9)

where n - a number of higher education institutions

The closer M_i value approaches 1, the higher the social market filter capacity and, on the contrary, M_i approach to zero indicates its small capacity. If M_i limit values indicate the uniqueness of a particular higher education institution, these values of the social filter of the total educational services market M_c show the institutional environment efficiency in general.

The social filter capacity is only one of the institutional environment functioning characteristics. The social and economic essence of this indicator is in indicating the information capacity of the educational services market, consistency of feed-forward and feedback loops forming the labor market "signals", the industrial complex originality, etc.

But these indicators may also be characterized at another point. Identification of the social filter (R_i) efficiency which can be defined as the ratio of the number of free vacant study places $(n_в)$ to the sediment value (n_0) is essential to the market institutional environment characteristics:

$$R_i = 1 - \frac{n_в}{n_0}, \qquad\qquad O \leq R_i \leq 1, n_0 \neq O$$

(10)

Similarly, it is possible to determine the efficiency of the social filter of the total educational services market:

$$R_c = \frac{\sum_{i=1}^{n} R_i}{n},$$ (11)

where n - a number of market segments

The higher the proportion of vacant study places in various market segments, to a greater extent the market external environment factors affect the efficiency of the system functioning of the institutional environment. The higher the social filter efficiency, the greater the sediment value and and the less the number of vacant study places. Apparently, for every market segment one can talk about some optimal value of the social filter "performance rating". This indicator can be defined as some average

characteristic of the efficiency indicators - Rc for a certain period (e.g., for several years):

$$R_c(t) = \frac{\sum_{i=1}^{n} R_i(t)}{\sum t_i}$$

,

(12)

where t_i - fixed time periods of the social filers efficiency measurements.

The market social filter efficiency largely depends on the tension factor that represents the ratio between the number of applicants for vacant study places and the number of these vacant places. The higher the tension in the market, the greater the pressure experienced by social filters. Excessive pressure (especially for a long time) can lead to failures in the filters "work", or even disable them. Therefore, every market social filter has certain application limits, it is subject to failures, "breakdowns" and deformations.

The market social filter can be represented as a certain system of interconnected local filters that (like barriers during a sporting event) creates obstacles for participants of the competitive selection to vacant study places. If to use the above comparison, it should be noted that barriers forming a single system of the educational services market, have different configurations and sizes.

According to the definitions established by the authors, the market social filter "complexity" C = {Ci}means the number of local social filters coupled in a single system by starting conditions, under which the total number of applicants and vacant study places on a particular market segment or the aggregate educational services market, is determined.

The filter complexity is essential in cases where the tension in the market is high and a social filter operates under considerable pressure. The higher the pressure on the filter, the greater the probability that its results (selection) will be carried out not in full compliance with the rules established by the institutional environment. In these situations, the filter complexity, its multiple layers, functional branching will withstand the disturbing pressure of the market external environment.

Assessing the functioning of the social filters of the educational services market in the Far Eastern region. The authors carried out the analysis of the social filters functioning; the analysis revealed a key factor affecting the peculiarity of the Far Eastern educational services market. It is a prevailing contradiction between the labor market supply and the educational services market demand.

The previous research showed that, despite the existing dynamics of the employment educational level growth, the educational system demonstrated weak susceptibility to impulses emanating from the economic restructuring processes, and it mostly developed in accordance with its "internal" logic (Li, Hsiao & Lee, 2013). It is associated primarily with the fact that many of those who are currently getting a good formal training, are to work at workplaces not requiring high qualifications.

This internal system higher education regularity, in its turn, determines a number of peculiar problem situations in the labor market (Li, Hsiao & Lee, 2016).

If the trends associated with the academic educational standards devaluation, growth in demand for the second (and even third) higher education preserve, the development of education in Russia, including its various territorial entities, may well

follow the way that can be presented as the "education as a means of selection" in the social filter theory.

The paradox of this Russian model is that it essentially combines two alternative models: devaluation asymmetry and deficit asymmetry. In the labor market, there is a higher education devaluation, which inevitably leads to a reduction in the education quality and creates a gap between a higher education institution diploma and the actual quality of the general and special vocational training of a graduate. At the same time, it is accompanied by a reduction in the motivation to obtain high-quality knowledge (Hasan et al., 2010; Crotty, 1998). This problem urgency lies in the fact that even at the student's desk a gap between the two targets of future specialists with higher education, is formed; the targets are to increase a status position of an individual and to develop a professional qualification of a person as a specialist. This gap is now starting to grow to the extent that a dominant goal has a higher rating, and this goal is investments both of a family and a student in obtaining a higher education diploma itself.

The authors conducted a social research of value orientations to knowledge and attitude to the educational process of different students; the research fully supports this conclusion. Repeatedly conducted snap polls consistently confirm this motivational phenomenon. Dynamics of formation of the student's "interest in learning", regardless of his/her specialty and future profession, reflects a significant devaluation of the socially significant goal.

It was revealed that in the second year of study, there is a kind of "inflection point" in relation to the positive motivation to acquire knowledge. In all subsequent years of study, the positive motivation to get education, interest in learning begin to decrease in proportion to the students' moving up to another year of study. All indicators of the motivation for learning of the fifth year students are the lowest. Only 32% believe that their interest in learning is still high, but 46.8% of the fifth year students keeps it in the range of the positive subjective assessment. At the same time, 14% believe that along with their moving up at the last year of study their interest in learning has no priority in the social values.

It is clear that there are important objective reasons predetermining this process peculiarities – the students' necessary professional potential has been significantly accumulated by this study time. A subjective component affects demotivation to the educational process: on the horizon there are work search problems, social status acquisition prospects. But at the same time, there is a correlation between interest in learning and students combining study with work. Among those who work constantly, demotivation to knowledge is the highest: 12.0% of students who are constantly combining study with work, note the complete lack of interest in learning.

According to the students' estimates, for more than 46% of those who combine study with work, it negatively affects the educational process, prevents them from learning. Among those for whom work interferes with learning, there is the lowest interest in learning (73% of the total number). Almost 45% of students who combine study and work, are more optimistic about the educational process. And still, among them demotivation is quite high - almost half of them lose their interest in learning to a greater or lesser degree.

Conclusion

Such an effect of the labor market on the attitude to the educational process, in its turn, leads to distortions in the labor market, invalidates vocational education and reduces benefits from it. In the case where there is a mismatch between a formal

certificate of higher education received by a graduate and an actual professional qualification, there is an asymmetry. A higher education institution included in the institutional environment of the labor market in the region, no longer fully meets the needs of one of its subjects – a labor force buyer.

Now, there are closed-loop direct and indirect information interactions between the educational services market and the labor market. Currently:

- increase in the educational level brings in the imbalance between the number and quality of employees and the requirements to them by the production;

- as a result of this, asymmetries in the labor market conditions are enhanced, skills shortage occurs with overproduction, specialists with higher and vocational education are inefficiently released in the labor market;

- the education quality begins to decline and increasingly begins to perform the selection function, thus turning into a kind of a social filter that allows the population to acquire knowledge and skills not according to their aptitude, motivation aspirations and professional selection, but according to their ability to pay tuition. Higher education institutions are largely formed by students not on the basis of the aptitude competition, but on the basis of the living standards "competition".

Along with the education growth trend in the Russian Far East, there is growth of the "below" gap between the labor force quality and the job quality. This gap means that jobs require a higher quality of the professional qualification training than an employee really has. It is formed due to the emerging skills shortage, i.e. as a result of the higher education devaluation. However, a disproportionate growth of education also leads to an increase in the "above" gap between the labor force quality and the job quality: jobs imply a lower quality of the professional qualification training than employers' requests and requirements to applicants for these jobs. A higher education diploma itself to a certain extent no more proves a professional qualification.

To a large extent, the higher education value is associated with the labor force seller's personal characteristics. In accordance with the human capital theory developed by G. Becker, the most important characteristic that distinguishes a human capital from a physical one, is that it is, by definition, embodied in the investor's personality. This feature is associated with another one. "This embodiment is the main reason due to which marginal benefits from the human capital decrease as it accumulates. One obvious consequence of such an embodiment is that, since each investor's memory, physical strength, etc. are limited, additional human capital production sooner or later begins to be characterized by diminishing returns".

From G. Becker's human capital theory, one can make an important conclusion on the relationship of motivation and age structures in the territory. In terms of the final period of human life, more recent investments are unable to bring income within the same period as the earlier ones. This effect is especially important for Russia, and especially the Far East regions with high mortality level (Bekker, 2003). All other things being equal, the time value increase with an age increased raises marginal costs of more recent investments as compared to earlier ones, as they require more expensive time. It means that, firstly, time "productivity" per human capital investment unit is not in balance with the investor's age, if to speak about both an individual, and cumulative investing in the society in the region, taking into account the age structure of its population.

And second, as the human capital accumulation will make more "recent" investments more expensive and, as a consequence, reduce their value, it will affect people's motivational intentions to costs associated with the professional qualification

increase. The "older" the age structure in the territory, all other conditions being equal, the lower the rate and extent of raising the professional component level of the labor potential in the territory, that, ultimately, will affect the formation of systemic disparity in it, which will be reflected in the imbalance of the labor market conditions..

This is what happens now in the labor market in the Russian Far East. And if the current trends continue, these processes will increase in future years.

Drawing a conclusion, social filters of both the educational services market and the labor market can be assessed:

- with low local filter capacity coefficients (Mi), indicating involvement of a minimum set of only formal characteristics in social filters;

- with poor efficiency of social and economic filters (Ri), meaning the filters "performance rating"approach to their maximum values.

Minimum values of the tension coefficient and a low level the social filters complexity indicate their considerable deformations.

Disclosure statement

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