

KNOWLEDGE ASYMMETRY AS A SOURCE OF THREAT TO NATIONAL SECURITY

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Abstract

Knowledge begins with the help of objective characteristics of the manifestations of human activity (both in its activity or behavior in communication with a social group). This made it possible to introduce a tuple of quantitative and qualitative parameters as a characteristic of knowledge. It shows how a metric can be entered into a tuple of knowledge (individual, social group, or society). It is shown that the obtained results can increase the management efficiency of migration processes.

Keywords: knowledge, asymmetry, thread, national security, migration.

Introduction

Knowledge is a reason for the country's development in the modern world. Many scientific studies are dedicated to the study of the role and influence of knowledge in the social, economic, and other areas of social development. As a rule, these works were carried out within the framework of separate scientific branches. However, a unified approach to describing such problems has not yet been built. There are errors, mistakes, and failures that arise in the communication between people who belong to different knowledge (cultures). Such failures occur at all levels, from the activities of individuals in society to large-scale economic and political processes.

The work develops the approach to quantitatively describe knowledge asymmetry as a threat's source to national security and to analyze this using the example of migrants.

Research results

Let's define knowledge (information) as norms of behavior, methods, results of activity, algorithms, and programs of activity of individuals, as well as ways of communicating with people in their joint behavior and joint activities [1].

The knowledge of a person (or a group of people) will be determined by the tuple K , which includes quantitative and qualitative characteristics for individual knowledge components. Individual components of the tuple K can be considered components in some local coordinate system localized on a person or a separate group of people. The tuple includes methods and technologies necessary to maintain human life in society. It may also include, for example, social, economic, moral, ethical, religious, and other characteristics that determine the behavior of an individual or group. The tuple also necessarily includes the characteristics that describe the social and professional individual activities (or a group of people, when considered a single and indivisible whole).

Each tuple can be represented as $K_s = (k^s_1, k^s_2, \dots, k^s_i, \dots)$. Here k^s_i is a separate method, technology, or way of doing an activity (either for a person or in collaboration with other people). Such a tuple can be viewed as a knowledge piece that is localized on an individual. Note that many people can have the same tuple. In this sense, learning (education) is a way of localizing a tuple on a person. The totality of society's knowledge is a collection of individual tuples:

$$K = \bigcup_{s=1}^{s=n} K_s. \quad (1)$$

Here n is a total quantity of separate tuples.

Each tuple is a separate point K_s in the set K . The metric $d(K_i, K_j)$ in space K of the society knowledge can be introduced as follows:

$$d(K_i, K_j) = \|K_i - K_j\| = \|\Delta K_{ij}\|. \quad (2)$$

Here the indices i and j correspond to the tuple of knowledge.

The specific metric type can be chosen depending on the task at hand. In general, it is necessary to compare the components of tuples with each other. For example, one can choose the following metric:

$$d(K_i, K_j) = w_1 |k_1^i - k_1^j| + w_2 |k_2^i - k_2^j| + \dots + w_n |k_n^i - k_n^j|, \sum_{s=1}^n w_s = 1. \quad (3)$$

Here w_s are the corresponding weights for the characteristics. They are selected at the conditions of the problem being considered (for example, they can select when processing the expert opinions). One can use other metrics, which are similar to (3) (for example, instead of (3) go to the Cartesian difference for a set of characteristics).

Let's consider the problem of the influence of migrants from a developing country on the level of the knowledge system of a developed country. Since people come from a developing country, they do not have all the necessary fragments of knowledge to carry out activities and life in a developed country. Conversely, some fragments of knowledge cannot be used by them in a developed country. And even more than that: certain fragments of migrants' knowledge may even be unacceptable for a developed country.

Two options are presented in Fig. 1 and Fig. 2.

In the Fig. 1 case, migrants from a developing ("less developed", will be marked as "L") country have separate fragments of knowledge that can be used in the developed country (will be marked as "D"). This means that migrants with knowledge in the interval $[K^D_{min}, K^L_{max}]$ can adapt to the conditions of life and work in a developed country fairly quickly and with relatively little education costs. These are those fragments of knowledge that are useful for life and joint activities in a developed country. In developing countries, the total quantity of people who have knowledge in the interval $[K_{min}, K_{max}]$, is a small fraction of the total population. An important circumstance is motivational conditions for migrants to stop using the knowledge from the interval $[K^L_{min}, K^D_{min}]$ (in detail see [2]). Such knowledge is harmful in developed countries because in a developed country, the relevant behavior of migrants will be destructive.

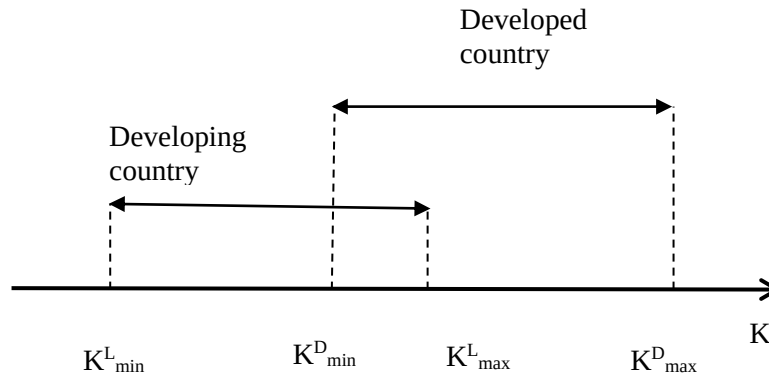


Fig. 1. Knowledge tuples of migrants and natives have common fragments.

Note that for ex-pats from a developed country to a developing country, the situation in Fig. 1 may also occur. However, in this case, they may learn the missing fragments of knowledge on their own.

Let's consider an example from China. The intensive development of the Chinese economy was accompanied by an intensified return to Chinese universities of established scientists and those who received education and Ph.D. in developed countries. This allowed the creation of several world-class universities in China and increased the number of people with modern knowledge. Shen [3] provides an "inside view" of the universities in China. The author emphasizes that "compared with older generations of scientists, Chinese scholars born after the 1970s, especially Chinese scholars who have obtained doctorates abroad ... seem to be less affected by nationalism and patriotism, showing a stronger cosmopolitan orientation." The author also draws attention to the fact that "the current academic evaluation and talent policies may restrict the scientific research potential of young scholars in China." In particular, "the Ph.D. returnees are disadvantaged in terms of accruing social capital in the domestic academic community – so they may fail in local competitions for resources". This happens for the reason that "even well-trained young scholars face many difficulties in their professional development when they are required to produce world-leading research in an academic system which prioritizes support to the small number of senior scholars who have made outstanding achievements." These phenomena testify to the growing conflict between the knowledge tuples in China and in developed countries. These

phenomena will likely determine the development of China in the future.

The second variant corresponds to the case in Fig. 2, when the knowledge tuples of migrants and natives do not have common fragments (or their influence is negligible). In this case, it is necessary to carry out significant and varied general training for migrants. At the same time, it must be taken into account that only a small number of people can acquire an additional very significant amount of new knowledge. Then the selection of migrants should be carried out solely on their ability and desire to learn and their ability to acquire the minimum necessary knowledge (in detail see [2]).

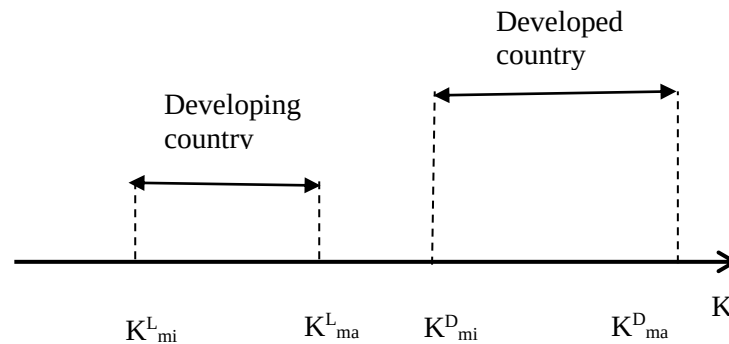


Fig. 3. The case when knowledge tuples of migrants and natives do not have common fragments.

The problems of organizing the training for migrants in developed countries in detail are described in [2]. Note that in a situation where people from a developed country get into a developing country and are forced to live “according to its laws”, the case is the opposite. Already people from developed countries have to learn new pieces of knowledge. At the same time in developing countries, as a rule, the education system does not include teaching fragments of knowledge that are “familiar from early childhood” or “obvious” to the indigenous people. There are many examples from Vietnam, Afghanistan, Iraq, and many other countries, which convincingly testify to the existing misunderstanding between people from developed countries (usually the military contingent) and indigenous people.

Conclusion

The obtained results can be important for a wide range of problems in territorial development management. Territories here mean not only the regions of one country but also individual countries, which sometimes have quite distinct territorial differences. The lives of people in these territories will require different knowledge. The difference in knowledge, as a rule, can be localized in individual elements of the tuple. The free migration of people is one of the crucial elements of a market economy. People should be free to choose their place of residence. They should also be free to change their place of work and profession. The development of the country is based on this.

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