Labour resources for farms

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Abstract. The article is devoted to the study of the problem of social conditions of reproduction of labour resources for farms in modern Russia. Based on the analysis of modern publications of the science-intensive Scopus database, the international experience of the development of farming and labour resources of this category of production organizations is considered. Significant substantive trends in the theoretical part of the study were reflected in the methodology and methods of empirical research conducted by the survey method in the South of Russia (Stavropol Krai). In total, 417 people permanently residing in rural areas of Stavropol Krai took part in the survey. Factor analysis of the survey data made it possible to develop a structural model for choosing living conditions in rural areas as a basic basis for the possible inclusion of the able-bodied population in farming activities. The structural elements of the model are: social guarantees at the federal and regional levels and their implementation at a high quality level, the authorities' concern for the well-being of citizens; favourable socio-ecosystem characteristics of living in rural areas associated with high-quality nutrition, the possibility of creativity, preservation of folk traditions, manifestations of social initiative; the possibility of a healthy lifestyle of a modern young family with children in an ecologically clean region; family ties and positive social communications perceived as a safe habitat; inclusion of rural areas in regional socio-cultural and innovative processes; indigenous living–love for a small homeland. The obtained factor model will help in the development of programs for the effective involvement of new participants in the social group of farming and the development of effective state and regional policies in the field of reproduction of labour resources in rural areas of Russia.

1 Introduction

In the south of Russia, in a region with a traditionally rural way of life, farming products are widely in demand. It should be noted that farm food currently finds an association with organic food products in the perception of the population of large cities with large shopping centers, which significantly expands the demand for them.
In order to meet the needs of the population for organic and farm food, it is important to ensure their continuous production. The processes of farming development have received broad state support in Russia, which is being successfully implemented in the regions, including the North Caucasus. It should be noted that the production process of farmers is associated with a large amount of manual labour, irregular working hours, high dependence on climatic and weather conditions and other factors that form the peculiarity of farming. This determines the level of attention to the qualitative reproduction of a social group of farmers who are ready to solve production problems.

The topic of characteristics of reproduction of labour resources for farms is currently relevant not only for Russia. So, for example, the author of the article M. Samak draws attention to the social conditions for commitment to farming and organization of organic food production [1]. In the article, based on the research conducted in the farming environment, the author analyses the social conditions in which farmers can adopt and implement organic farming methods. Despite the high level of professional training of respondents (study participants) in the field of agriculture, the origins of organic farming, according to the author, are family traditions. Thus, the preservation and support of the traditional way of life in rural settlements can help the development of organic farming. This conclusion is also important for our study of the social factors of reproduction of labour resources for farms, since it defines as significant the factor of family traditions and rural lifestyle.

Despite the large size and the industrial revolution, the relevance of the issue of farming development does not decrease for a country like China. As evidenced by the results of research by modern authors. In the article by Y.-H. Shan, L.-N. Wang, M.-J. Liuthe implementation of low-carbon economy approaches in the work of farms is considered: from the willingness to follow these approaches to real farm production [2]. Researchers note high market risks for small agricultural producers due to the introduction of low-carbon management, which negatively affects food security in general and does not achieve the goal of environmental safety. The article emphasizes the importance of information education in the field of advanced technological trends in agricultural production [3, 4, 5, 6] and the formation of a sense of belonging to a social group, its mission in the rural community in the process of socio-professional formation of new farmers.

Important conclusions for the development of the methodology of our research are made in the article by Z. Rykiel[7]. In his opinion, a village as a locality should be perceived as a rural collective of residents or a rural community. The Polish village, as the author notes, is traditionally an agricultural space based on the preservation of national traditions of life and culture. Urbanization and industrialization, characteristic not only of the Polish reality in the above example, lead to the transfer of urban rationality to the rural situation. Accordingly, the peasantry as a class is transformed into a socio-professional position and loses its uniqueness in the process of cultural homogenization. And as a result, it loses in the attractiveness of reproduction of the peasantry and farming. Thus, the origins of social reproduction are connected with the traditional rural way of life and the communal nature of the life and work of farmers.

The trend of organic food consumption that has developed in recent years helps to preserve traditional agricultural technologies and processing of agricultural products. Thus, it is a positive socio-economic factor in the reproduction of labour resources employed in farms and small processing industries. The expansion of consumer demand for organic food products has become a catalyst for the return to farming of indigenous rural residents from among the youth who left for the city for higher education. So the author of the article A.B. Bruce analyses the results of 30 interviews with farmers. In his opinion, alternative food chains that have been developed in southern Ohio have shown the attractiveness and possibility of developing a career in agriculture for the younger generation of
representatives of farming families who had professional experience outside the agricultural sphere [8]. Thus, the integration of farmers' activities into the modern socio-economic context of the region expands the possibilities of obtaining a stable income from the sale of high-quality agricultural products [9]. In turn, the demand for and profitability of farm products creates favourable conditions for the reproduction of farm labour resources.

Agricultural labour is associated with a number of features of this activity. Among such features is its perception as one of the most dangerous activities. Based on qualitative data from a Scottish study by the authors of S. Shortall, A. McKee, L.-A. Sutherland it is argued that socialization and normalization of danger occurs within farm families [10]. The study shows that accidents on farms are a stable social model, and socialization and normalization of danger occurs in farm families. In connection with the conclusions of the authors' research, in order to develop a methodology and methodology for studying the social factors of labour reproduction for farms, we define two important theses: the articulated features of agricultural farm production [11, 12] and the role of the farmer family in the socio-professional socialization of a new generation of farmers.

The topic of the development of related production repeatedly arises during the discussion of the development of farming. These are rural, agricultural tourism, ethnotourism, ecological tourism, all kinds of gastronomic tours, the development of small enterprises processing products of plant and animal origin, and others. The authors of the article are F. Kong, H. Ruan, W. Liao, K. Qinthey give an example of the development of forest cooperatives. In their opinion, joining forest cooperatives can better synchronize the relationship between the demand for farmers' social services and their availability [13]. This approach speaks in favour of the integrated development of rural areas, where there is a place for farms with the production of organic food and all kinds of related industries. In general, this improves the socio-economic situation of rural areas both in terms of finance, and in terms of the development of social services and improving the well-being of the population engaged in farming.

The authors of the article X. Lu, X. Jia, J. Niu, analysing the process of cotton production in China, pay great attention to the development of the industry's workforce [14]. In their study, they note that along with such improvements as production technologies, the introduction of new equipment, optimization of varieties, quality and layout of the area, scientific prevention and control of plant diseases and insect pests to improve the quality of cotton, the social and economic well-being of farmers plays an important role, as small-scale production in this industry is preserved. According to the authors, it is not only about improving working conditions and technologies, but also socio-professional socialization, ensuring sustainable reproduction of the industry's labour resources, and the well-being of workers.

Summarizing the conducted brief review of publications affecting the subject field of our research, we can formulate a number of relevant approaches for the successful reproduction of farm labour resources through social factors:

1. Preservation of the traditional way of life in rural areas and the formation of farmers' sense of belonging to a social group, its mission in the rural community;
2. Integrated development of rural areas with the organization of related production (tourism, processing, forestry, etc.) and provision of the rural population, including farmers, with modern socio-cultural, household, telecommunications and municipal services;
3. Provision of state support for the socio-professional socialization of young farmers arriving after receiving higher education to work in farms;
4. Support for the production of organic food by farms based on family production traditions.
2 Materials and methods

The empirical part of the study of social factors of reproduction of farmers as a social group was conducted in Stavropol Krai in October 2021. Using the Google Form, 417 people from 12 rural settlements of Stavropol Krai took part in the survey. Statistical procedures of factor analysis of the survey database performed in the SPSS program (version 23) allowed formulating latent variables of the choice of living conditions in rural areas as the basic basis for the possible inclusion of the able-bodied population in farming activities.

The tools of the study of the choice of living conditions in rural areas included 28 dependent variables and 12 variables of the socio-demographic block, which acted as independent in the analysis, this made it possible to identify those satisfied with the parameters of the place of permanent residence of rural residents and to build a factor model of the basic basis for the possible inclusion of able-bodied rural population in farming activities.

The list of variables for choosing living conditions in rural areas is as follows:
1. The territorial proximity of relatives’ residence;
2. Good employment opportunities;
3. Good opportunities for earning and purchasing quality things and food;
4. Tax advantages for certain categories of citizens, benefits;
5. Good environmental conditions;
6. Wide access to high-quality quality of education;
7. Friendliness and openness of the local community;
8. There is no possibility of moving to another place;
9. Safe and calm environment;
10. Wide access to medical services;
11. Broad access to social services and benefits;
12. Natural (organic) food products;
13. Stable water supply and favorable sanitary and epidemiological situation;
14. The opportunity to have affordable and comfortable housing;
15. Good ecology without harmful production;
16. Ample opportunities for creativity and innovation;
17. Good conditions for preserving folk traditions;
18. Rich, active life;
19. Excellent transport communication;
20. Ample opportunities for social initiatives;
21. Good opportunities for classes physical education and sports;
22. The authorities' concern for a decent life for pensioners;
23. Assistance in finding work and support for the unemployed;
24. Good quality and accessibility of preschool educational organizations;
25. High quality of social benefits and services;
26. The authorities take care of the welfare of citizens;
27. High-speed and accessible Internet in the locality;
28. Regional authorities are engaged in the climate agenda.

3 Results and discussion

Let's consider the results of the statistical procedure of factor analysis. To build a structural model of the choice of living conditions in rural areas, as the basic basis for the possible inclusion of the able-bodied population in farming activities, we will determine the full explained variance. According to the results of statistical processing of the survey database in the SPSS Statistics program (version 23), the total explained variance was 62.059% and was determined by 6 components. The data is presented in table 1.

Table 1. The full explained variance of the population's choice of living conditions in rural areas
The listed 28 variables determining the choice of living conditions in rural areas as the basic basis for the possible inclusion of the able-bodied population in farming activities were evaluated by the survey participants on a 5-point scale in accordance with their significance for respondents. As a result of factor analysis performed by Rotation Method: Varimax with Kaiser Normalization (Rotation converged in 11 iterations), a factor model with 6 factors was formed.

### Table 2. Factor model of conditions for the population to choose a rural place of residence (on the basis of a rotated component matrix)

<table>
<thead>
<tr>
<th>Structural model factors</th>
<th>Number of the variable describing the factor, its name and a coefficient of factor loading</th>
<th>Meaningful interpretation of the factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Good employment opportunities (0.587); 3. Good opportunities for earning and purchasing high-quality things and food (0.586); 4. Tax advantages for certain categories of citizens, benefits (0.706); 6. Wide access to high-quality education (0.540); 10. Wide access to medical services (0.742); 11. Broad access to social services and benefits (0.814); 22. The authorities' concern for a decent life for pensioners (0.639); 23. Assistance in finding work and support for the unemployed (0.528); 25. High quality of social benefits and services (0.670); 26. The authorities care about the welfare of citizens (0.579)</td>
<td>Social guarantees at the federal and regional levels and their implementation at a high quality level, the authorities' concern for the well-being of citizens</td>
<td></td>
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<tr>
<td>2. Natural (organic) food products (0.706); 14. The opportunity to have affordable and comfortable housing (0.609); 15. Good ecology without harmful production (0.653); 16. Ample opportunities for creativity and innovation (0.693); 17. Good conditions for preserving folk traditions (0.691); 20. Ample opportunities for social initiatives (0.557)</td>
<td>Favorable socio-ecosystem characteristics of living in rural areas associated with high-quality nutrition, the possibility of creativity, etc.</td>
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The resulting factor model has the following meaningful characteristic:

The first factor in choosing a rural area for living: social guarantees at the federal and regional levels and their implementation at a high quality level, the authorities' concern for the well-being of citizens.

The second factor in choosing a rural area for living: favourable socio-ecosystem characteristics of living in rural areas associated with quality nutrition, the possibility of creativity, preservation of folk traditions, manifestations of social initiative.

The third factor in choosing a rural area for living: the possibility of a healthy lifestyle for a modern young family with children in an ecologically clean region.

The fourth factor in choosing a rural area for living: family ties and positive social communications, perceived as a safe environment.

The fifth factor in choosing a rural area for living: the inclusion of rural areas in regional socio-cultural and innovative processes.

The sixth factor in choosing a rural area for living: the indigenous inhabitant of the territory is the love of a small homeland.

Thus, we can say that the factor model of the conditions for the population to choose a rural place of residence shows the key directions for attracting the population to rural areas and providing a basic basis for the possible inclusion of the able-bodied population in farming activities.

4 Conclusion

A brief review of foreign publications shows possible approaches to solving the problem of providing farms with labour resources. A comparative analysis of the conclusions of the theoretical and empirical part of the study confirms the existence of logical relationships between the identified foreign approaches and the factor model of the conditions for the population to choose a rural place of residence.

Thus, the relationship between the fourth factor and theoretical conclusion:

– No. 1 – the preservation of the traditional way of life of rural areas and the formation of farmers' sense of belonging to a social group, its mission in the rural community;
– the relationship between the first factor and theoretical conclusion No. 2 – the integrated development of rural areas with the organization of related production (tourism, processing, and forestry) and the provision of the rural population and, including farmers, modern socio-cultural, household, telecommunications and municipal services;
– the relationship between the third and fifth factors and theoretical conclusion No. 3 – ensuring state support for the socio-professional socialization of young farmers arriving after higher education to work in farms;
– the relationship between the second factor and theoretical conclusion No. 4 – support for the production of organic food by farms based on family production traditions.

The obtained factor model can be used in forecasting the processes of development of farms, effective involvement of new participants in the social group of farming, as well as the development of effective state and regional policy in the field of reproduction of labour resources of rural areas of Russia.

References
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