

DEVELOPMENT OF SOCIAL INFRASTRUCTURE TO IMPROVE RESIDENTS' QUALITY OF LIFE: THE CASE OF PAKRUOJIS DISTRICT

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Abstract

The development of social infrastructure (SI) determines the quality of life (QOL) of local residents. In rural municipalities too little attention is paid to the issue of SI in relation to the QOL of residents, it is inconsistent and fragmented. The development of SI in the Pakruojis district is insufficiently effective, fragmented, and lacks a comprehensive approach; consequently, the challenge arises of ensuring that the development of SI improves the QOL for local residents and reduces migration and emigration flows. The aim of the study is to analyse the links between SI and the QOL of residents from a theoretical perspective and to identify problem areas in the development of SI in the Pakruojis district. The methods used in the study include analysis and synthesis of scientific literature, comparison method and experts semi-structured interviews. The results show that the development of SI covers a wide range of services that need to be developed in order for the territorial unit to remain viable and to reduce migration and emigration flows. The development of SI in the Pakruojis district is not effective and there is a lack of a comprehensive approach to problem solving.

Keywords: *Social Infrastructure, Quality of Life, Rural Area, Municipality, Local Level.*

JEL Codes: *O18, I31, H41, H75.*

Introduction

The problem of rural municipality development is becoming increasingly relevant in today's society. The successful development of remote municipalities depends on well-developed social infrastructure (SI). An expanded SI provides people with access to health, medical, educational, and scientific institutions, postal services, sports facilities, transportation, arts, and other services that are essential to everyday life. Vaznonienė and Kiaušienė (2018) argue that SI services play a decisive role in shaping Lithuanian society and the economy at various territorial levels. A well-developed SI is particularly important in rural areas, where problems such as unemployment, emigration, lack of social skills, and social exclusion prevail. Residents are an important element in the development of the region. According to Čepienė and Bučienė (2020), rural municipalities cover the largest area in Lithuania and are therefore experiencing the most rapid negative demographic transformations, which are causing intensive changes in population density.

Rural municipalities are facing the problem of population decline. The reason for this is insufficient attention to solving social and economic problems, which determine the intensity of rural municipality development. For a settlement to be viable, it is important to understand and emphasize the importance of the local population. Demographic changes in rural areas, related to the aging population and the problem of retaining young people, mean that rural SI services are becoming an important factor in the vitality of rural areas (Atkočiūnienė et al., 2014). Therefore, it can be argued that the functionality of SI services and the quality of life of residents depend on the number of residents in the area.

Decisions made by local authorities regarding the development of SI are often insufficient to achieve a more developed SI that would have a positive impact on people's lives. This paper raises the scientific question: what factors determine the characteristics of SI development in the Pakruojis district with a view

to improving people's quality of life? The object of the study is the development of social infrastructure. The aim of the study is to analyse the links between SI and the quality of life of residents from a theoretical perspective and to identify problem areas in the development of SI in the Pakruojis district. Objectives of the study: 1) to examine theoretical approaches to SI and its links to the quality of life of residents; 2) to identify the areas of SI that are most relevant to the population and how they affect the quality of life of the population in the Pakruojis district. Methods used in the study: analysis, synthesis, and summarization of scientific literature, graphical representation, semi-structured interviews.

Literature review

The concept of SI is multifaceted, as different scholars define it differently. It depends on the level of research, context, research objective, etc. According to Enneking et al. (2025), SI refers to public spaces, organizations that support communities and social life, ranging from public libraries and swimming pools to public parks and religious institutions. Zahnov (2024) states that SI is a physical place in the neighbourhood that brings people together, so SI

can be described as the foundation of communities. Pylypenko et al. (2022) emphasize that SI has a significant impact in rural municipalities, where the accessibility, condition, dynamics, and quality of SI facilities are particularly important factors, all of which have territorial and practical significance. Yuldasheva and Toirjonov (2022) emphasize the economic importance of SI, stating that it is a set of industries and enterprises that ensure the livelihoods of the population. SI includes housing, its construction, social and cultural facilities, utilities, healthcare, education, preschool institutions, recreation and leisure, retail trade, catering establishments, sports facilities, transport, communications, institutions providing financial and credit services, legal advice, etc. To summarise this, it can be said that SI is one of the most important factors ensuring the satisfaction of basic human needs, as well as the development of the state and territory (Frolova et al., 2016). The development of SI is influenced by social, cultural, political, legal, environmental, and economic factors (Atkočiūnienė et al., 2014; Iurchenko, 2022). These can be grouped into internal and external factors that determine the development of SI in rural municipalities (Table 1).

Table 1. Internal and external factors determining SI environment (made by authors according to Atkočiūnienė et al., 2014; Iurchenko and Iurchenko, 2022)

Internal factors	External factors
<ul style="list-style-type: none"> • Financial and social resources • Local government, other SI organizations' legal acts, decisions made by leaders • Service quality, accessibility, availability, flexibility • Education, qualifications, needs, involvement in problem solving, psychological factors of residents • Sustainable territorial community development potential that contributes to the formation of residents' spiritual and material needs and new needs • Housing system, physical resources, working hours, transport, communication networks 	<ul style="list-style-type: none"> • Unemployment rate, wage levels, provision of energy resources • Tax legislation • Green infrastructure, protected areas • Family formation dynamics, population size, demographic structure, consumer activity, etc. • Negative external economic and geopolitical factors • Government spending on research, productivity growth due to automation, internet access, telecommunications infrastructure, etc.

Following Table 1, internal factors determining the development of SI are mainly related to financial resources and local government decisions, but these factors are largely dependent on the external environment, especially state policy. State policy regulates the financial resources of rural municipalities, so local decisions on SI development are directly related to it. If SI development does not keep pace

with overall social and economic growth, social problems increase and migration to regions or countries with a higher quality of life intensifies (Atkočiūnienė et al., 2014; Iurchenko, 2022).

The term “social infrastructure” is also mentioned in the context of QOL and is considered its key component (Kossymbayeva et al., 2019). The increase in life expectancy has prompted researchers to take an interest in

improving QOL and well-being (Birenbaum et al., 2025). The main elements of QOL are health, education, employment, leisure, social relations, security, environment, landscape, and cultural heritage (Beltramo et al., 2024). Social cohesion and a sense of belonging determine the relationship between SI and well-being. Public places where people gather contribute to the creation of everyday social cohesion and improve people's QOL by satisfying the basic human need to belong (Zahnow, 2024). It should be emphasized that it is very important to study the relationship between SI and the QOL of residents, as SI organizes and shapes people's daily lives and can contribute to improving the QOL and

emotional well-being of residents (Kim, Im, 2020). The interface between SI and QOL is presented in Fig. 1.

The importance of SI and its links to the QOL of the population became particularly apparent in 2020, when the world was hit by the COVID-19 pandemic. After the pandemic, when people returned to public spaces, the vital role of SI became clearly visible in terms of physical spaces where individuals can establish social contacts and create social cohesion and well-being (Zahnow, 2024; Mahran et al., 2024). Grum and Grum (2020) argue that SI and the QOL of the population are inextricably linked.

Social infrastructure
=
<p style="text-align: center;">SERVICE RECIPIENTS USING DISTRIBUTION SERVICES</p> <ul style="list-style-type: none"> • Water, electricity, sewerage • Green areas, recreation areas, playgrounds • Schools, pre-school educational institutions, hospitals, cultural institutions, social institutions <p style="text-align: center;">IMMATERIAL FACTORS</p> <ul style="list-style-type: none"> • Community spirit, communication, relationships, recreational and cultural activities.
=
Quality of life
Economic environment, political environment, psychological environment, physical environment, mobility opportunities, social environment, etc.
=
ESTABLISHED ENVIRONMENT = QUALITY OF LIFE = WELL-BEING

Figure 1. The interface between SI and quality of life (made by authors according to Grum, Grum, 2020)

The authors (Grum and Grum, 2020) argue that SI consists of the entire environment created by the population, the social environment, and social factors that are directly related to the QOL and self-perception of the population in a specific area. It is emphasized that all elements of SI must be developed in a balanced manner, as a good QOL is impossible without properly developed utilities, public infrastructure services, and other necessary facilities.

Research methodology

In order to identify and analyse the issues related to SI and QOL in the selected territorial unit - Pakruojis district, a semi-structured expert interview was conducted, which provides a detailed opinion and values of the experts. During the interviews, the experts were informed of the purpose of the study and assured that their confidentiality would be guaranteed. To obtain the most accurate assessment of SI and the QOL of the population, seven experts were selected who had experience in assessing and providing insights into SI and its links to the QOL of the population (Table 2).

Table 2. Expert selection criteria (made by the authors)

Experts	Selection criteria	Number of experts	Codes of experts
Employees of the Pakruojis district municipality administration and elderships	<ul style="list-style-type: none"> • At least 3 years of work experience; • Represents the interests of district residents; • Resolves issues related to SI; • Higher education. 	3	A-1; A-2; A-3
Head elders	<ul style="list-style-type: none"> • Cooperates with residents in resolving issues related to SI development; • Cooperates with the municipal administration, the eldership, and the LAG on issues related to the maintenance, development, and organization of the territory. 	1	S-1
LAG employees, board members	<ul style="list-style-type: none"> • Proactive not only in LAG activities, but also in social activities; • Provides various proposals to the administration and municipalities regarding the development of SI. 	1	V-1
Community leaders	<ul style="list-style-type: none"> • Proactive, active community leaders who submit SI projects to municipal administrations, LAGs, etc. • Clearly defined and visible SI development in the community. 	2	B-1; B-2

In summary, it can be said that the selected experts have professional experience (at least 3 years), actively participate in addressing SI issues, and represent the population. They are involved in project implementation, coordination of activities, and cooperation with local government and LAGs. They are also active in social activities, proactive in making proposals, and, in the case of municipal and seniority employees, have the appropriate education.

When compiling the semi-structured interview questionnaire, the aim was to formulate questions in such a way that experts could identify the strengths and weaknesses of SI development in the Pakruojis district as specifically as possible. The aim is to identify problem areas in the management of SI and the aspects that are most important to the district's residents when assessing their QOL in the territorial unit. The questions for the experts were divided into two blocks: 1) assessment of the SI sector in the Pakruojis district; 2) assessment of the links between the SI of the Pakruojis district and the QOL of its residents. This article represents findings based on the following questions:

1. Assessment of the state of social infrastructure in Pakruojis district (1 – very poor;

2 – poor; 3 – neither poor nor good; 4 – good; 5 – very good).

2. In your opinion, what social infrastructure services are most lacking in Pakruojis district?

3. Which sectors should be identified as the most important in improving the quality of life of the population?

4. In your opinion, has the social infrastructure in the Pakruojis district been developed in recent years and contributed to improving the quality of life of the population?

5. Who do you think are the most important stakeholders at the municipal level who should contribute to the development of social infrastructure?

6. Do you think that local government decisions that determine the development of social infrastructure in the district are sufficient in terms of the quality of life of the population?

Research results

During the expert interviews, they were asked to evaluate eight social infrastructure sectors in the Pakruojis district. The figure shows the informants' summarized responses regarding the evaluation of social infrastructure in scores (Fig. 2).

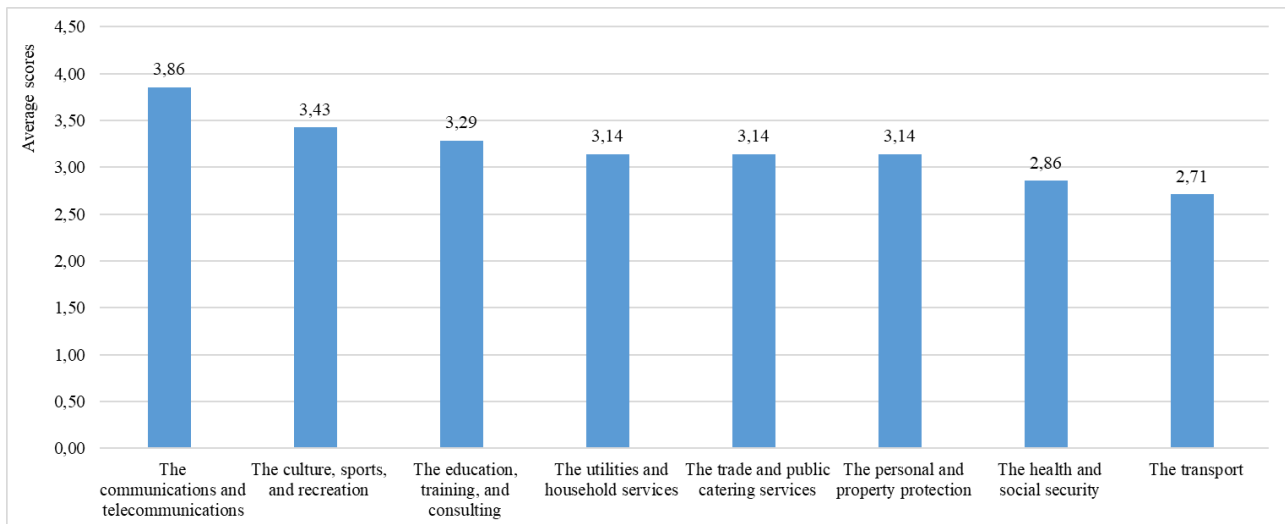


Figure 2. Assessment of the state of SI of Pakruojis district by sector, in scores (compiled by the authors)

**Note: 1 – very poor condition, 2 – poor condition; 3 – neither poor nor good condition; 4 – good condition; 5 – very good condition.*

Results show that the highest rating was for the communications and telecommunications sector. However, the A-2 expert assessed that it is precisely in the communications and telecommunications sector that the municipality has the least influence, as most areas are supervised not by the local government but by communications companies. The financial capacity of municipalities has the least influence in this sector. The lowest scores were given to the

transport sector (2.71 points) and the health and social protection sector (2.86 points). When asked which SI services the experts considered to be most lacking in the Pakruojis district, most of them mentioned healthcare and public transport services.

Table 3 summarizes the SI sectors assessed by experts and their opinion on the most problematic areas of SI services.

Table 3. Problems identified by experts related to deficiencies in SI services in the Pakruojis district (compiled by the authors)

SI services	Problems mentioned by experts	Number of experts
Health and social protection	There is a shortage of family doctors, medical specialists, nurses, long queues to see doctors, limited psychological support for young people and seniors, a need for home care (nursing, meals on wheels, etc.), lack of day centers for seniors and people with disabilities, lack of social housing.	A-1; A-2; A-3; S-1; V-1; B-1; B-2
Transport	Many gravel roads, inconvenient or limited access to SI objects, especially in rural areas that are far from the district center; poorly developed transport infrastructure	A-1; A-2; B-1; B-2
Culture, sports, recreation, and employment	There is a lack of sports and cultural activities, not enough youth centers, and few employment opportunities in rural areas.	A-3; B-1; B-2; S-1; V-1
Education, training, and consulting	Insufficient prevention of bullying and drug abuse, lack of modern educational institutions, high-quality preschool education for children	A-1; A-2; B-2
Tourism, trade, and public catering	The tourism sector is underdeveloped, and there is a lack of high-quality accommodation, dining options, etc.	A-2; A-3

By linking SI and the QOL of residents, the aim was to identify which sectors should be considered the most important in improving the

QOL of residents. During the interviews, four SI sectors were most frequently mentioned (Table 4).

Table 4. According to experts, the most important SI sectors that have the greatest impact on the quality of life of the population (compiled by the authors)

SI sector	According to experts, the most important SI sector for improving the QOL of the population
Education, training, consulting	B-2; V-1
Transport	A-3; B-1
Culture, sports, and recreation	B-1; S-1; V-1
Health and social protection	A-1; A2; A-3; B-1; B-2; S-1; V-1

An analysis of the results shows that, according to experts, the most important sectors are health and social protection, culture, sports, and recreation. These sectors are part of our daily lives, which increases their importance to the population. Grum and Grum (2020) classify the sectors identified by experts as vitally important, which means that in order to keep a territorial unit viable, it is necessary to develop these four sectors identified by experts.

Detailed responses from some experts were provided when asked whether SI had been developed in the Pakruojis district in recent years and had contributed to the QOL of residents. For example, expert A-1 stated that *“projects related to the provision and development of integrated assistance, complex services for families, transition from institutional care to community-based services, and other smaller projects of local significance have certainly contributed to improving SI and the QOL of residents”*. Another expert A-3 mentioned that *“in small steps over the past few years, SI has been developed in the Pakruojis district and has contributed somewhat to improving the QOL of residents”*. Expert B-1 stated that *“in certain areas of the Pakruojis district, SI is being developed in accordance with the needs of the population, but there are still significant disparities between urban and rural areas”*. Expert S-1 noted that *“thanks to the efforts of the residents, we won the participatory budget project and will have a new recreational space, so SI is being developed and residents were able to get involved in it”*. According to experts, the development of SI in the Pakruojis district in recent years has been carried out consistently through the implementation of projects in various areas, which have contributed to improving the QOL of residents. However, it is emphasized that the development of SI remains uneven, especially between urban and rural areas, and the results achieved are not yet sufficient to ensure that the

needs of the population are met in a comprehensive and balanced manner.

The experts were asked who, in their opinion, are the most important stakeholders at the municipal level who should contribute to the development of SI whether to assure residents QOL. The experts' opinions varied considerably. When asked this question, experts identified the following stakeholders: residents by themselves (A-1; A-2; B-1; B-2; V-1), self-government (A-1; A-2; A-3; B-1; B-2; S-1; V-1), LAGs (A-2; A-3; B-1; B-2; V-1), farmers (A-2; B-1; V-1), members of the business community (A-3; B-1; V-1), communities (A-1; A-2; B-1; S-1; V-1), business representatives (A-1; A-2; B-2; V-1). It should be noted that all experts mentioned local government as the most important stakeholder that should contribute to the development of SI. Expert A-2 stated that local government should bring together all these stakeholders if the aim is to achieve high-quality SI development that meets the needs of the population. It is argued that cooperation between stakeholders is an inevitable condition for the development of SI and the QOL of the population.

When assessing the expert evaluations given above of the relationship between SI and the QOL of local residents, it is clear that local government decisions on SI development are significant and yield positive results in some areas, but they are not sufficient to fundamentally improve the QOL of residents. It is emphasized that decisions are often limited by financial resources, and the biggest problems remain the accessibility of health services, the lack of social housing, and the development of social assistance and youth employment infrastructure. The need for greater flexibility and faster response to the changing needs of the population is also highlighted.

Summarizing the results of the expert interviews, it can be stated that the experts consistently identify the healthcare sector as the

biggest problem in the region, stating that there is a lack of quality services in the field of medicine. Another significant observation made by all experts is that the provision of social support to the elderly is a problem area, with a lack of day care services. Other important problems include the poor quality of public transport services, poor roads, and limited sports and cultural activities for young people and those living further away from the district center. The problems identified by the experts show that the development of social infrastructure in the Pakruojis district is not being carried out effectively and that there is a lack of a comprehensive approach to solving the problems.

Conclusions

1. The concept of social infrastructure is linked to meeting the needs of the population and communities and to territorial cohesion. Well-developed SI forms the basis for regional development, but this development is often limited by a lack of financial resources.

2. Quality of life is the basis for the development of a territorial unit, encompassing economic, social, psychological, political, and natural factors. SI covers housing, healthcare, education, culture, utilities, transport, and other areas that directly determine the quality of life of the population; therefore, their comprehensive and balanced development is essential.

3. It has been determined that the links between social infrastructure development and the quality of life of the population are clearly visible, and it can be stated that the goal in the area of social infrastructure is to improve the quality of life of the population, which is also emphasized by most authors when analysing the concepts of social infrastructure and quality of life. In order to achieve a higher quality of life for the population, it is important to understand all elements of social infrastructure and develop them simultaneously.

4. The results of the research showed that experts uniformly identified the lack of healthcare services as the biggest problem in the region, stating that there is a shortage of high-quality

medical services. Another significant observation made by all experts is that the provision of social support to the elderly is a problem area, with a lack of day care services. The healthcare sector is also underdeveloped: there is a shortage of medical specialists and long queues to see doctors. Other important problems include: the poor quality of public transport services, poor roads, and limited sports and cultural activities for young people and those living further away from the district center. These problems identified by experts disclose that the development of social infrastructure in the Pakruojis district is not being carried out effectively and that there is a lack of a comprehensive approach to solving problems.

5. Accordingly, addressing social infrastructure problems in the Pakruojis District, the local government should act as the primary coordinator, bringing together residents, communities, local action groups, businesses, and farmers to find common solutions and secure funding. On a practical level, it is necessary to adopt a more flexible approach to needs assessment and respond more quickly to residents' needs, prioritizing services closer to local communities, partnerships, and community initiatives.

6. The limitations of this study are related only to the analysis of one municipal district; the problems identified in Pakruojis district will not necessarily be the same in other similar municipalities. The full implementation of this study would be ensured by combining several research methods, which could be done by developing research in this area.

7. The scientific and practical significance of this study lies in the fact that it would supplement regional development and SI studies with empirical data at the municipal level, revealing the factors influencing the development of SI in the Pakruojis district, and the insights gained can be applied in practice in municipal strategic planning, decision-making, and the identification of priority areas for SI development.

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