REVENUE POTENTIAL AND FINANCIAL AUTONOMY OF PANEVĖŽYS REGION MUNICIPALITIES

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Abstract. The issue of revenue generation and financial autonomy is one of the greatest challenges in the local governance domain. The revenues at the disposal of the municipalities not only determine the socioeconomic development, implementation of the regional policy goals, but also reveal the situation of financial autonomy. The phenomena of local government revenue measurement and financial autonomy are viewed in the academic literature as multidimensional, as they are characterised by a wide range of indicators. Combining all the revenue indicators into a single index can therefore provide an indication of the level of financial autonomy of local government in terms of revenue.

The TOPSIS multi-criteria approach allows for a comprehensive and integrated assessment of the financial autonomy of municipalities by providing a single summary indicator composed of several revenues ratios.

The empirical research analyses the situation of the revenue potential of Panevėžys region municipalities, assessing the financial autonomy of municipalities in the period 2009-2022. The research shows that all municipalities in the region are very homogeneous in terms of revenue indicators and have a moderately low level of financial autonomy. The empirical results also show that municipalities' financial autonomy is changing slowly compared to the results of previous research. This confirms the dependence of municipalities on centralised financial management, which is governed by the legal acts that have a strong impact on the development of municipalities' financial autonomy and financial capability. Hence, the results in a way also show a lack of capacity on the part of municipalities themselves to seek opportunities to create sustainable, stable perspectives from an economic and social perspective.

Keywords: revenue potential, financial autonomy, TOPSIS method, municipalities

INTRODUCTION

The issue of revenue generation and financial autonomy is one of the greatest challenges in the local governance domain. Solid financial resources in the municipalities are the basis of their social and economic development on the local level. The revenues at the disposal of the municipalities not only determine the socioeconomic development, implementation of the regional policy goals, but also reveal the situation of financial autonomy. Therefore, it is important to have a balanced combination of revenues consisting of own revenues and transfers of a share in the local governance revenue structure, and the ability of municipalities to implement the local social and economic development goals by increasing the revenues.

The implementation of the European Green Deal, the Paris Conference objectives, and the Sustainable Development Strategy goals cannot be achieved without the sustainable development of rural areas. EU documents underline the importance of local government financial autonomy for the development of national regions and the sustainable development of rural areas (A long-term Vision for the EU's Rural Areas - Towards stronger, connected, resilient and prosperous rural areas by 2040, EC, Communication from the Commission to the European Parliament, 2021). At the national level, municipal FA is viewed as a challenge, highlighting the low capacity of municipalities to increase the revenue of their budgets (Sustainable Public Finance Development Programme for 2021-2030 by the Ministry of Finance of the Republic of Lithuania, 2022; Programme of the Government of the Republic of Lithuania, 2020; White Paper on Lithuanian Regional Policy for Sustainable Development 2017-2030, 2017).

Researchers, practitioners, and supranational organizations have been discussing on various LGU revenue assessment issues: revenue classification differences, own revenue sources and their definition, empowerment of revenues as a fiscal policy instrument to increase the financial autonomy, assessment of financial autonomy from the revenue perspective. Identification and assessment of the revenues that could be viewed as a potential for financial autonomy is a serious scientific and practical issue.

This topic has been elaborated from the municipality financial autonomy perspective by the researchers (Miceikienė, Skauronė, Krikštolaitis, 2021; Wichowska, 2021; Skica et. al., 2020; Wichowska, Wierzejski, 2019; Standar & Kozera, 2019; Standar, 2019; Ladner, Keuffer, 2018; Satoła, 2018; Kopanska, 2017; Satoła, Standar, Kozera, 2019; Głowicka-Wołoszyn, Satoła, 2018) who focus on explanation and assessment of the revenue indicators that reflect various aspects of the financial autonomy of municipalities.

Research problem: what is the revenue potential and financial autonomy in the municipalities of Panevėžys region?

Research aim: to assess the revenue potential and the financial autonomy of rural municipalities in 2009-2022 according to the evidence of Panevėžys region of municipalities.

Research methods: scientific literature analysis, TOPSIS method, descriptive statistics methods.

THEORETICAL BASIS FOR BUILDING FINANCIAL AUTONOMY AND REVENUE POTENTIAL OF LOCAL GOVERNMENTS

Since the 1980s, when a detailed analysis of local autonomy was carried out (Clark, 1984; Pratchett, 2004; Sauviat, 2004), the scholars developing the theories of local government autonomy have focused on three dimensions of the autonomy of local government units: the unit's freedom from central government intervention, the unit's territorial freedom to take decisions for the purpose of carrying out defined tasks, and the reflection of local identity. On the basis of an analysis of scientific literature and legal documents, several types of local government autonomy have been identified, with the following main features: local government capacities (Oualli, Boussetta, 2017; Jacob et al., 2008), responsibilities and rights (Turala, 2020; Satoła et. al., 2019; Cigu, 2014; Gilles, 2012; Beer-Tóth, 2009), local financial resources (Turala, 2020; Standar, Kozera, 2019; Burbulytės-Tsiskarishvili ir kt., 2018; Psycharis et. al., 2016; Cigu, 2014; Gilles, 2012; Beer-Tóth, 2009) and value-related freedoms (Burbulytės-Tsiskarishvili ir kt., 2018; Psycharis et. al., 2016; Pratchett, 2004; Sauviat, 2004; Europos vietos savivaldos chartija, 1985; Clark, 1984), and the principles of efficiency, fairness, subsidiarity, sustainability and coherence (Turala, 2020; Beer-Tóth, 2009; Hajilou, et. al, 2018; Łuczak et al., 2018; Cigu, 2014; Kozera, Glowicka-Woloszyn, 2016; Psycharis et. al., 2016; Alm et. al., 2014; Jemna, Onofrei, Cigu, 2013). (see Figure 1).
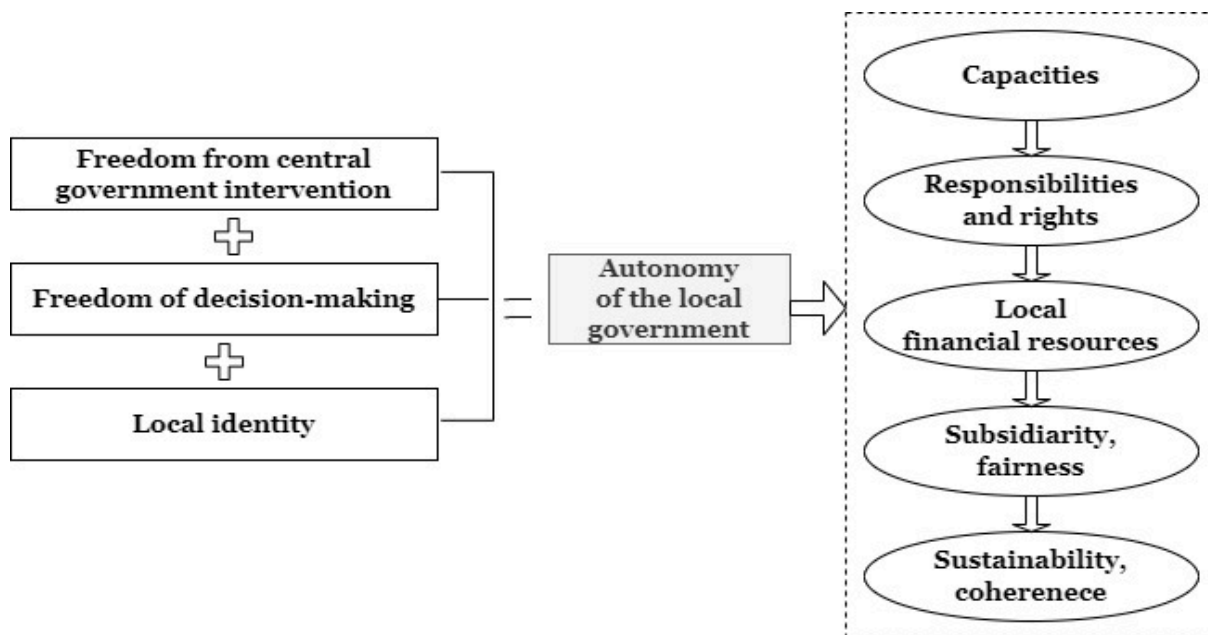

Figure 1. **The concept of local government autonomy (Skauronė, 2022)**

However, one of the most important types of local government autonomy is financial autonomy, which is the combination of interoperable elements of local government revenue, expenditure, budget, and borrowing that is the subject to the externalities and internalities and reflects the respective legal principles, principles of freedom and capacities exercised by the central government for the purpose of autonomous management of the combination, as well as the capacity of the local government bodies to generate and allocate financial resources, develop local economic and social well-being, and create added value (Skauronė, 2022).

In summary, theories of financial autonomy suggest that regional local governments should finance their needs mainly using own sources of revenue and that the central government should provide the local governments with the control. Own revenue is often treated as an indicator of the well-being of a local government and a key source of information on its financial situation and the level of autonomy (Dziekanski, 2020) and this means that it is highly important to assess the financial autonomy in terms of revenue (Skauronė, 2022; Wichovska, 2021; Satoła et. al., 2019; Kapidani, 2018).

In the empirical studies, researchers (Wichowska, 2021; Vavrek, Pukala, 2019; Satoła et. al., 2019; Standar, Kozera, 2019; Luczak, Just, Kozera, 2018; Luszak, Kozera; Bacci, 2018; Glowicka-Woloszyn, Satola, 2018; Kozera, Luszak, Wysocki, 2017; Kozera, Glowicka-Woloszyn, 2016) assessed the financial autonomy of region municipalities using diverse revenue indicators (see Figure 2).
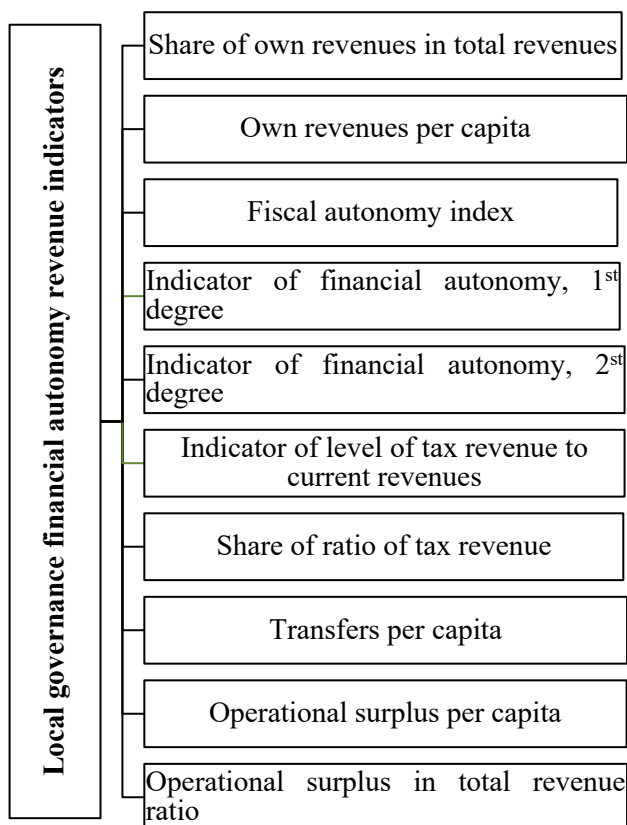
Figure 2. **Revenue indicators used to assess the financial autonomy of region local governance**

When assessing the potential of region municipalities to increase their financial autonomy, the following should be considered as the factors boosting sustainable development: the principles of financial sustainability and their operation; local revenue and tax base, and the degree of their autonomy and sustainability; fairness and sustainability of the revenue redistribution; factors determining the financial transfers; local prospects for social, economic and regional development, etc.

The scientific literature distinguishes several essential principles of the sustainable development of rural areas: 1. The most recent approach to rural development processes relates to the concepts of sustainable development. 2. Institutional development of communities. One of the essential aspects is institutional development, which includes the creation of community organizations and their active activities. 3. Links between the principles of good governance and sustainable development, strengthening the institutional dimension of sustainable development. An important principle of subsidiarity is that everything that the community (municipality) can solve or manage itself, it must have the rights and opportunities to do so. 4. Evaluation of territorial coherence. Comprehensible, measurable (in numbers, percentages, coefficients) indicators, the data of which are officially published and easily accessible, are necessary for the evaluation of any activity.

In general, in the international research environment, researchers (Miceikienė et. al., 2021; Satola et. al., 2019; Standar, Kozera, 2019; Glowicka-Woloszyn, Satola, 2018) particularly emphasize the lack of country-specific differences in the assessment of the financial self-sufficiency of local governments and they justify the need for and the need for innovation in the development of theories of public finance.

EMPIRICAL RESEARCH METHODOLOGY FOR THE ASSESSMENT OF RELATIVE INDICATORS OF REVENUE AND FINANCIAL AUTONOMY OF PANEVĖŽYS REGION MUNICIPALITIES

Empirical research problem and period of the empirical research. The problem is defined by the question – what is the revenue potential and financial autonomy in the municipalities of Panevėžys region? The importance of assessment municipal revenue performance and financial autonomy lies in the fact that it is possible to evaluate economic and social welfare creation, sustainable allocation, redistribution and growth decisions in the context of the region's municipalities, as well as to identify the need for the development of new scientific insights into these economic phenomena in the fields of economics, fiscal policy and the theories of decentralisation and regional growth.

The aim of the study was to choose the longest possible evaluation period for the assessment of the revenue potential and financial autonomy of municipalities in Panevėžys region, as this leads to more accurate results. Therefore, the empirical study period covered 14 years, i.e. from 2009 to 2022.

Empirical research sample. 6 municipalities of Panevėžys region.

Empirical research data. Municipalities revenue data from the Department of Statistics of the Republic of Lithuania.

Empirical research tool for calculating the results. All calculations were carried out using the software tool Microsoft Office Excel.

The methodology of the empirical research consisted of 2 stages:

1. Selection and calculation of the relative indicators of revenue determining financial autonomy of Panevėžys region municipalities.
2. Formation of the index of financial autonomy of Panevėžys region municipalities on the basis of revenue indicators and assessment of the level of financial autonomy in the period 2009-2022.

Stage 1. The empirical research, based on an analysis of the scientific literature (Wichowska, 2021; Vavrek, Pukala, 2019; Satoła et. al, 2019; Standar, Kozera, 2019; Luczak, Just, Kozera, 2018; Luszak, Kozera; Bacci, 2018; Glowicka-Woloszyn, Satola, 2018; Kozera, Luszak, Wysocki, 2017; Kozera, Glowicka-Woloszyn, 2016) and the subject-related criteria (the calculation of indicators is based on statistical data, which are collected and reported periodically), eight relative revenue indicators of the Panevėžys region municipalities were selected, on the basis of which a set of indicators was constructed: *R = (PIT per capita, EUR/capita) (r_1); fiscal wealth index or tax revenue per capita (EUR/capita) (r_2); PIT as a share in the total municipal revenue, % (r_3); own revenue per capita, EUR/capita (r_4); own revenue as a share in the total revenue or first-degree financial autonomy, % (r_5); non-tax revenue per capita, EUR/capita (r_6); grants as a share in the total municipal revenue or state intervention indicator, % (r_7); transfers per capita, EUR/capita, (r_8)).* The study assumes that the two revenue indicators r_7 and r_8 are of a minimising nature and have a dampening effect on financial autonomy, while all other indicators are of a maximising nature and have a driving effect on financial autonomy.

It should be noted that the TOPSIS method for assessment multi-criteria phenomena uses revenue ratios, which are measured in different units, so it is necessary to unify the data across the dimensions of the variables before starting the calculations. For this purpose, the indicators are normalised (Simanavičienė, 2016). The authors' empirical research used vector normalisation of revenue ratios. Various methods have been used to calculate the revenue ratios prior to the development of the financial autonomy index: calculation of the objective significance of the revenue ratios, Entropy, mathematical, descriptive statistics.

Stage 2. A set of revenue benchmarks allowed us to construct an index of municipal financial autonomy using the TOPSIS method. This index is mathematically expressed by the following formula (Hwang, Yoon, 1981; Ginevičius, Podvezko, 2008; Simanavičienė, 2011):

$$K_i = \frac{L_i^-}{L_i^+ + L_i^-} , (i = \overline{1, m;}), \tag{1}$$

where $K_i \in [0,1]$

where: K_i – value of the i-ths municipality generated by assessment under the TOPSIS method, with the highest K_i value corresponding to the most financial autonomy municipality.

L_i^+ – total closeness of the i-ths municipality to the ideally best variant;

L_i^- – total closeness of the i-ths municipality to the ideally worst variant.

The formation of financial autonomy index of Panevėžys region municipalities on the basis of revenues indicators and the assessment of the level of financial autonomy in the period under consideration was carried out in the steps of the TOPSIS method, in which various mathematical methods were applied: calculation of the ideal solution of the distance of each municipality from positive A^+ to negative A^- determination of the distance of each municipality L^+ to L^- in n-dimensional Euclidean space, descriptive statistics.

ASSESSMENT OF REVENUE INDICATORS AND FINANCIAL AUTONOMY OF PANEVĖŽYS REGION MUNICIPALITIES

Revenue potential of Lithuanian regions municipalities. Today, regional development in Lithuania is one of the most important policy priorities and poses many challenges. It is therefore essential for municipalities in the regions to have a balanced and sustainable revenue stream, the combination of own revenues (mainly taxes and charges) and transfers (earmarked grants and general-purpose grants) as a share of municipal revenues, which determines the ability of local governments to raise their own revenues (e.g. by increasing tax rates). Financial autonomy in terms of revenue has an impact on the ability of each municipality to develop entrepreneurial initiatives, implement projects, and deliver quality public services, generating and increasing its revenue potential.

In reality, according to the Ministry of Finance of the Republic of Lithuania (2023), the own taxes of Lithuanian municipalities account for only about 3% of their total revenue. It should be noted that only two own taxes are included in the mix of all municipal revenues. They are land and immovable property of legal persons, which account for 1.56% and 1.15% respectively, while other non-tax revenues of municipalities account for 6.25%. And even personal income tax (PIT), as the main source of municipal revenue potential, is also being redistributed. Overall, central government transfers account for the largest share of municipal budgets in Lithuania of any European country making 87.9%.

Increasing the revenue potential of regional municipalities depends mainly on population size. Human capital resources are the decisive factor of sustainable development of a municipality, i.e. the ability to carry out activities, develop businesses, promote entrepreneurship, develop certain sectors of rural businesses and activities and attract investments.

Description of the economic and demographic environment of Panevėžys region. In Panevėžys region there are 6 municipalities, of which rural municipalities (5 of 6) comprised for the major part of the territory. The region's local economies are characterised by agriculture and natural resources, food and beverage production, furniture and textiles and biotechnology. These economic sectors are, in fact, also the revenue-generating potential of municipalities.

The results of the empirical research show that in the recent 14 years, Panevėžys region saw almost 20% decrease of the population, in some municipalities (Biržai district, Kupiškis district and Pasvalys district) it decreased by more than 24%, in Rokiškis district and Panevėžys district the percentage is more than 23 and in Panevėžys city municipality the decrease is 16%. These results show one of the biggest declines in Lithuanian regions (see Figure 3).
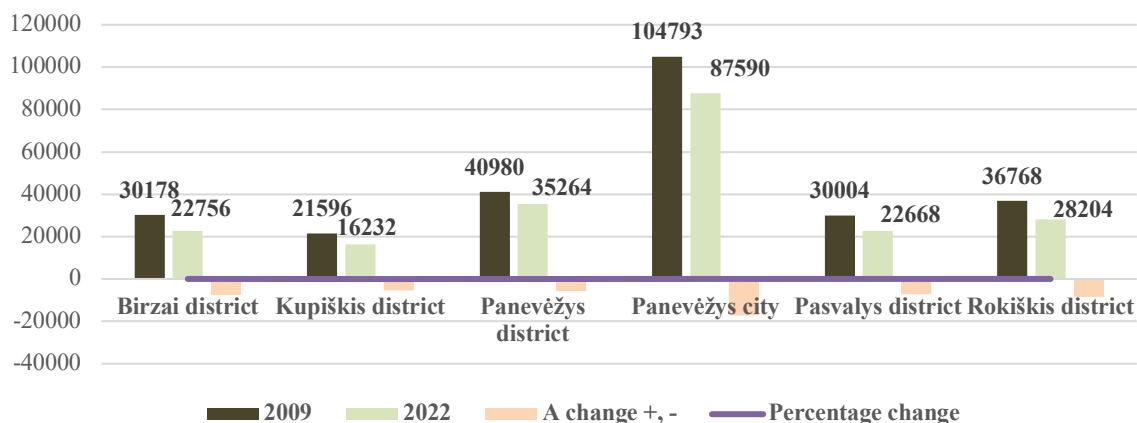

Figure 3. **Population change in Panevėžys region municipalities in 2009-2022**
Source: compiled according to the empirical research results.

It could be argued that these demographic changes affect the available labor force in the region, pose risk to the region's economic development, make the region less attractive to foreign investments and impair development of the region municipalities in financial terms.

Assessment of revenue indicators and financial autonomy of Panevėžys region municipalities in 2009-2022. The empirical research evaluated the financial situation of Panevėžys region municipalities using 8 income indicators (see Table 1).

Table 1

Level of weight of objective significance of the revenue indicators of the financial autonomy of rural municipalities, 2009–2019

Indicator, unit of measure	Direction of the indicator value	Values of the objective significance of the indicator						Mean
		Biržai district	Kupiškis district	Panevėžys district	Panevėžys city	Pasvalys district	Rokiškis district	
PIT per capita, EUR	Maximizing	0,2122	0,2145	0,1844	0,2523	0,2133	0,2000	**0,213**
Fiscal wealth index or tax revenues per capita, EUR	Maximizing	0,2015	0,1850	0,1740	0,2390	0,2052	0,1941	**0,200**
PIT (%) in the total municipality revenue	Maximizing	0,0165	0,0211	0,0197	0,0190	0,0228	0,0163	**0,019**
Own revenues per capita*, EUR	Maximizing	0,2065	0,1938	0,1832	0,2163	0,2103	0,2054	**0,203**
Index of financial autonomy, 1st degree/share of own revenues in total revenues, (%)	Maximizing	0,0146	0,0159	0,0191	0,0165	0,0210	0,0178	**0,017**
Non-tax revenues per capita	Maximizing	0,2705	0,2984	0,3589	0,0958	0,2626	0,3066	**0,265**
State intervention ratio (%)	Minimizing	0,0160	0,0124	0,0246	0,0269	0,0206	0,0185	**0,020**
Transfers per capita, EUR	Minimizing	0,0623	0,0590	0,0360	0,1342	0,0443	0,0411	**0,063**

Source. Made by the authors own calculations based on Department of Statistics of the Republic of Lithuania.

The research identified the most significant revenue indicators of Panevėžys region municipalities, which have the greatest impact on their financial autonomy. The results showed that in all municipalities the most significant relative revenue indicators during the period were: PIT per capita, EUR (1); tax revenue per capita, EUR (2); own revenue per

capita, EUR (3); non-tax revenue per capita, EUR (4). Although these revenue indicators have been on an upward trend over the period under review, they have not contributed to the rapid increase in the level of municipal financial autonomy. This is because municipalities are highly dependent on central government.

Descriptive characteristics of statistics revealed the tendencies of financial autonomy in municipalities of Panevėžys regions during the analyzed 14-year period from 2009 to 2022 (see Table 2). The relative revenue indicators of Panevėžys region municipalities show that the per capita personal income tax (PIT) has increased by 4.35 times during the period under review (as shown by the minimum and maximum values). However, the standard deviation means that the distribution of the PIT varied from municipality to municipality between 2009 and 2022 and did not encourage municipalities with lower revenues to take measures to increase it, as competition for this tax in Lithuania is a slow-moving instrument. This is because the main source of funding for municipalities' autonomous functions is PIT, which the main source of the municipalities' funding of the general budgets of the Panevėžys region, i.e. on average 42.34% of their total revenue or 83% of their total tax revenue, is considered to be a general-purpose subsidy, as it is redistributed centrally. The share of own revenue per capita of Panevėžys region municipalities revealed that the difference between the less affluent municipalities and affluent municipalities there is a 2.2 fold. As one of the most significant indicators, non-tax revenue per capita has been increasing between 2009 and 2022 (from €13.06 to €138.70), but overall it is very low. In municipalities budgets were dominated by a high share of grants (more than 48% of total revenue).

Table 2

Descriptive statistics of indicators describing the level of financial autonomy in municipalities of Panevėžys region, 2009–2022

Revenue indicator, (r_n)	Mean	Median	Standard Deviation	Min	Max
PIT per capita, Eur	424,12	372,13	194,06	205,22	893,70
Fiscal wealth index or tax revenue per capita, Eur	460,12	404,90	203,81	225,07	950,86
PIT (%) in the municipality revenues	42,34	42,94	6,29	30,33	54,65
Own revenues per capita, Eur	514,01	460,53	230,59	257,35	1079,49
Index of financial autonomy, 1 st degree/share of own revenues in total revenues, (%)	51,39	51,79	6,99	38,30	64,76
Non-tax revenues per capita, Eur	53,89	45,56	29,66	13,06	138,70
Share of grants in the total municipal revenues or State intervention ratio, (%)	48,61	48,21	6,99	35,24	61,70
Transfer per capita, Eur	461,74	416,73	146,13	265,59	852,66

Source. Made by the authors own calculations based on Department of Statistics of the Republic of Lithuania.

In summary, the analysis of revenue indicators of Panevėžys region municipalities shows that all municipalities in the region are very homogeneous (the same). The results confirmed the high dependence of municipalities on central government, which reflects the unfavourable context for joint development initiatives in the region, for multifunctional growth and for the advancement of the local economy and self-regulation.
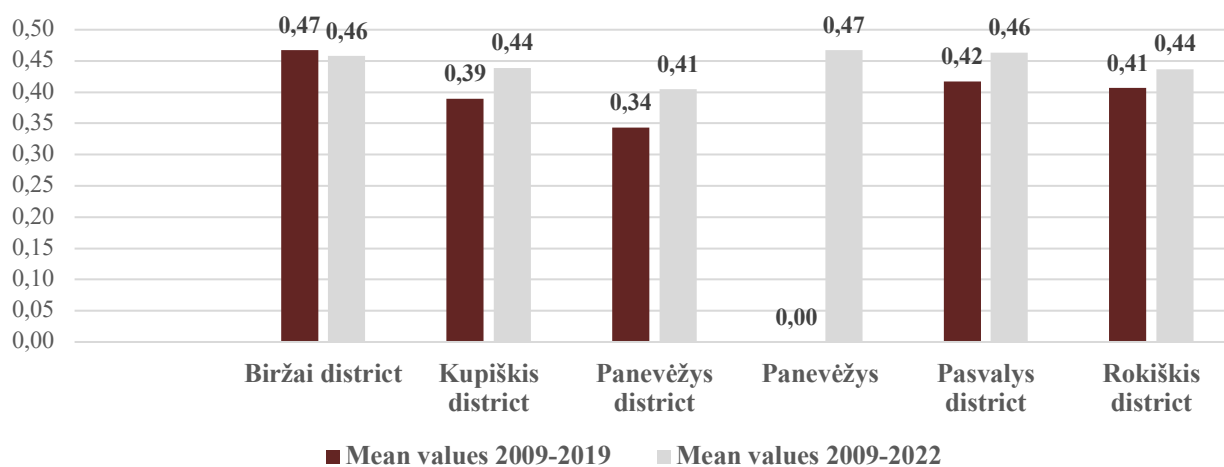
Figure 4. **Assessment of the financial autonomy level of municipalities in Panevėžys region 2009 – 2019 and 2009-2022**

Source: compiled according to the empirical research results.

It was also found that Panevėžys region municipalities are characterised by moderately low financial autonomy, as the index has not exceeded more than 0.5 points over the analysed period (14 years) (see Figure 4). The figure also

compares the results of the previous empirical research conducted by the author of this paper with co-authors (from 2009 to 2019) with the results of the current follow-up empirical research (from 2009 to 2022). It should be noted that while the previous research assessed the financial autonomy of rural municipalities, the follow-up research included the municipality of Panevėžys and assessed its financial autonomy.

The results of the study are useful for politicians, economists and local government leaders in the region to discuss how to respond to the needs of the region's municipalities, how to foster their local development from an economic and social point of view and how to increase the level of their financial autonomy.

CONCLUSIONS

The empirical study ongoing. The results of the study show that municipalities' revenue potential and financial autonomy are changing very slowly. The results of the empirical study confirm the high dependence of municipalities on centralised financial management, which is governed by legal acts that allow municipalities to be neither financially active nor self-sufficient. In fact, the results also show a lack of capacity on the part of municipalities themselves to seek opportunities to create sustainable, stable perspectives from an economic and social perspective.

Although in the municipalities of the Panevėžys region the transfers from the state budget (grants) to the municipalities' total revenues have been decreasing over the past years, the GPM, which accounted for about 42.6% of the municipalities' total revenues in the period under review, is in fact a grant as this tax is redistributed.

Municipalities of the Panevėžys region were making very little use of the potential to increase the non-tax revenues, which accounted for the smallest share in the total revenue structure. This kind of revenue is the basis for promotion of the entrepreneurship, sustainability, social, economic, and financial prospects for the municipalities.

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