MANAGEMENT OF INVESTMENT ACTIVITIES OF CITIES WITH POWIAT STATUS OF THE SILESIAN VOIVODESHIP DURING THE COVID-19 PANDEMIC

Krzysztof WODARSKI[1*], Justyna ŁUKOMSKA-SZAREK[2]

[1] Silesian University of Technology, Department of Management; krzysztof.wodarski@polsl.pl,
ORCID: 0000-0002-4725-1064
[2] Częstochowa University of Technology; Faculty of Management; j.lukomska-szarek@pcz.pl,
ORCID: 0000-0001-5521-9294
* Correspondence author

Introduction/background: The investment activity of local governments depends on many determinants, including their financial resources and economic conditions. Although pursuing an active investment policy is conducive to the development of local governments, emergency and crisis events may disrupt these activities. The present paper discusses the investment activity of cities and towns with powiat status in the region of Silesia in Poland during the COVID-19 pandemic.

Aim of the paper: The main objective of the research is to assess the investment activity of cities with powiat status in the Silesian Voivodeship in 2019-2021 using the classical TOPSIS linear normalization approach.

Materials and methods: The research was conducted based on a multi-criteria analysis of budget indicators using the TOPSIS method in 2019-2021. This method allowed for the determination of a synthetic index in the period studied and, consequently, to determine the investment activity classes of 19 cities with powiat status in the Silesian Voivodeship.

Results and conclusions: The research confirmed that the COVID-19 pandemic led to a slowdown in investment activity of cities with powiat status, although the Katowice metropolitan area was the leader in local investment in 2019-2020, followed by Gliwice in 2021. In 2019-2021, a fairly large variation in the investment activity classes of cities with powiat status in the Silesian voivodeship was evident. The largest number of them were classified as class 3, with as many as 9 in 2021. In 2020, the units studied (12 towns) were characterized by class 2 and 3 investment activity, with only three in class 1, including the Katowice metropolitan area, which dominated the ranking alongside Gliwice and Jastrzębie Zdrój.

Keywords: management, COVID-19, investment activity, local government, cities whit powiat status.

1. Introduction

The management of the investment activities of local government units (LGUs) is a complex process and depends on its financial potential and ability to implement development projects. Local investment is often referred to as investments in LGUs, municipal investments, infrastructure investments, and public investments (Kozłowski, 2017). As Zygmunt and Mach (2011), argue, investments in LGUs are expenditures incurred to increase public goods and are deliberate spending operations aimed at providing benefits for the local government community. The purpose of municipal investments is to serve the welfare of the local community (Zawora, 2014). Furthermore, they increase the competitiveness of the unit and are designed to attract investors and residents, thus improving the quality of life of the community and increasing budget revenue (Leszczyńska, 2015). Local government investments are characterized by a high level of complexity, capital intensity, limited scope, and serving the public interest (Filipiak, Dylewski, 2015). The investment activities of local governments differ significantly from those performed by businesses in terms of financing, purpose, or perceived efficiency, among other things (Kokot-Stępień, 2017). It should be noted that local investments are often not economically viable (they do not generate profits, they are non-profit), so there should be strong, substantive arguments for choosing a particular idea (Galiński, 2014).

The amount of property expenditures incurred depends not only on available funds but also on existing investment needs (Dworakowska, 2015). The relatively high investment expenditures and their upward trend can be considered symptoms of the high quality of the unit's policies, which lead to permanent local development and increased welfare of the local community (Kopańska et al., 2018). It is further recognized that the greater the financial independence of a local government, the greater the ability to make investment expenditures, and therefore the number of investments (Surówka, Owsiak, 2018). It is also supposed that the intensity of making investments may be influenced by the bottom-up initiative expressed by local residents. Therefore, in a local government where residents are not interested in the activities of the LGU, investment projects may be implemented to a lesser extent (Tomal, Nalepka, 2018).

An efficient investment policy should promote the reduction of disparities between regions (Frejtag-Mika, Sieradzka, 2014). The development of LGUs through investments can manifest itself in an increase in the quality of services provided, an increase in municipal assets, and the creation of encouraging conditions for new residents and entrepreneurs (Sztando, 2017). The investment policy in LGUs should be characterized by concern for its resources manifested in pragmatic and efficient use of them (Burzyńska, 2011). It is the combination of financial capabilities and efficient management that can guarantee local and regional development. Therefore, it can be concluded that it is the financial situation of a unit that determines development in its area (Sobko et al., 2021). Unfortunately, the financial condition of LGUs has changed in recent years due to a crisis of global proportions as a result of the COVID-19 pandemic. This crisis has also translated into the financial management in LGUs, particularly

their investment activities. Among other researchers, Arhipova et al. (2022) analyzed how people's behavior in different phases of the COVID-19 pandemic affected economic activity in municipalities in Latvia. Therefore, the following research question should be asked: How has the COVID-19 pandemic affected the investment activity of major cities in the selected region in Poland? Consequently, the main objective of the study was to assess the management of investment activities in cities with powiat status in the Silesian Voivodeship in Poland in 2019-2021 under the COVID-19 pandemic conditions.

2. Investments in the development process of local governments – literature review

Management of the development of LGUs is an organized and comprehensive activity aimed at creating optimal conditions to take advantage of opportunities and reduce risks (Ziółkowski, 2015). Local development is a staged process of socio-economic changes and adaptations aimed at better land use and improving the quality of public services provided (Krukowski, Sasak, 2016), improving the quality of life of the population, or increasing the availability of goods and services (Musiałkowska, Wiśniewski, 2017). Badach et al. (2021) postulated that development can be defined as the transformation by which simple forms become more complex, more perfect, and improved. Local development is considered as qualitative and quantitative change, with its intensity determined by a number of factors of great variety and strength of endogenous or exogenous origin (Adamowicz, 2020). There are suggestions in the literature that the municipalities that are able to effectively assess and strengthen their endogenous potential, which is specific to such units, have a better chance of development (Rogowska, 2018).

The concept of local government investments is considered a prerequisite for long-term development (Kotowska, Chłoń-Domińczak, 2012). In recent years, despite a marked increase in the number of infrastructure investments, a gap remains between the needs of the regions and the public investments (Wojciechowski, 2017). To support the development of LGUs, it is crucial to select and apply appropriate tools, among which economic and financial tools are the most popular (Zawora, 2016).

An advantage of municipal investments is that they help reduce development delays that exist in some areas for historical reasons (Kisman, Tasar, 2014). Municipal investments should improve the welfare of the local community, thus striving for the long-term development of the unit through economic activation (Poniatowicz, 2014). However, in order for investments to make a real contribution to local development, it is necessary to recognize the specific needs that exist in a given local government (Kotala, 2011). The literature emphasizes that there is a two-way relationship between local development and municipal investment expenditures expressed as the effect of investment expenditures on the level of local development but also

as the level of development affecting the propensity to invest (Standar, 2017). Therefore, the present study outlines the following research problems and questions: 1) How did the financial and investment potential of cities with powiat status in the Silesian region develop during the COVID-19 pandemic years, 2) Did the large cities of the Silesian region in 2019-2021 use their investment potential to stimulate their development?

3. Methods

To evaluate the investment activities of 19 cities with powiat status in the Silesian province (n = 19, n = 100%) a multi-criteria analysis was used based on the TOPSIS classical approach during the years of crisis (2019-2021), caused by the COVID-19 pandemic. Entities from the Silesian voivodeships were selected for the study, because of the 66 cities with powiat status, as many as 19 (28,8% in total) located in Silesia. This method makes it possible to determine a synthetic index, based on which it is possible to classify the towns studied into four classes of investment activity, from the most (1) to the least active (4). The research was carried out based on 7 indicators characterizing the investment activity of local governments, monitored by the Ministry of Finance, showing, among others, the percentage of property expenditures in total expenditures, the level of self-financing of investment activity, financial potential, investment potential (in % and per capita), or the utilization of investment potential (in % and per capita). The different stages of the research conducted, along with their detailed description, are illustrated in Table 1.

Table 1.
Stages of research in the assessment of investment activities of cities with powiat status

Specification	Description of individual stages of research	
	Characteristic	**Formulas and explanations**
Step 1. Selection of simple features for research	1. The analysis covered seven indicators (x_{ij}) characterizing the investment activity of LGUs: X_1 - Share of capital expenditure in total expenditure in % X_2 - Share of operating surplus and property income in capital expenditure (Self-financing ratio) in % X_3 - Development potential for property expenditures and capital repayments in % X_4 - Investment potential for property expenditures X_5 - Utilization of investment potential X_6 - Development potential per capita X_7 - Investment potential per capita	$$X = [x_{ij}]$$ $X_1 = Wm/Wo$ $X_2 = (No+Dm)/Wm$ $X_3 = (Pbzwr+(Do-Wb))/Wm+Rs$ $X_4 = (Pbzwr+(Do-Wb-Rs))/Wm$ $X_5 = Wm/(Pbzwr+(Do-Wb-Rs))$ $X_6 = (Pbzwr+(Do-Wb))/L$ $X_7 = (Pbzwr+(Do-Wb-Rs))/L$ Where: i – object number (i = 1, 2, ..., n); j – diagnostic feature number (j = 1, 2, …, m); x_{ij} – the value of the jth trait in the ith object; L – number of residents of LGUs; Do – total revenue; Dm – property revenue; Sm – income from the sale of property; Wo – total expenditure; Wm – capital expenditure; Wb – current expenditure; Rs – repayment of capital instalments on loans and credits taken out; No – operating surplus; Pbzwr – budget revenues excluding credits, loans, securities issues

Cont. table 1.

Steps 2 to 6. Determining the synthetic indicator using the TOPSIS method	2. Determination of the weight vector. Normalization of simple feature values	$w_{ij} = \frac{V_{ij}}{\sum_{j=1}^{m} V_{ij}} \; ; \; \sum_{j=1}^{m} w_j = 1$ Where: w_{ij} – the weight of the budget indicator; V_{ij} – coefficient of variation
		$\overline{x}_{ij} = \frac{X_{ij}-minX_{ij}}{maxX_{ij}-minX_{ij}}$ for stimulant; $\overline{x}_{ij} = \frac{maxX_{ij}-X_{ij}}{maxX_{ij}-minX_{ij}}$ for destimulant; Where: $\overline{x}_{ij}$ – normalized values of the j-th trait in the i-th object
	3. Calculating the weighted normalized matrix. Using the classic standard score procedure	$v_j = \overline{x}_{ij} * w_j$ Where: v_j – indicator value in the weighted normalized matrix; w – indicator weight
	4. Determining the coordinates of model objects for the positive (A_j^+) and negative (A_j^-) ideal of investment activity	$A_j^+ = (v_1^+, v_2^+, ..., v_n^+)$ $= \{(max_i v_{ij}\|j \in B), (min_i v_{ij}\|j \in C)\}$ $A_j^- = (v_1^-, v_2^-, ..., v_n^-)$ $= \{(min_i v_{ij}\|j \in B), (max_i v_{ij}\|j \in C)\}$ Where: A_j^+ - the positive ideal; A_j^- - the negative ideal
	5. Calculating the distance of each object from the positive S_i^+ and negative S_i^- ideal of development	$S_i^+ = \left[\sum_{j=1}^{m}(V_{ij} - V_j^+)^2\right]^{0.5}$; $S_i^- = \left[\sum_{j=1}^{m}(V_{ij} - V_j^-)^2\right]^{0.5}$ Where: S_i^+ – euclidean distance from the ideal value; S_i^- – euclidean distance from the anti-ideal value
	6. Calculating the value of the synthetic measure	$p_i = \frac{S_i^-}{S_i^+ + S_i^-}$ Where: p_i – the value of the synthetic measure

Step 7. Typological classes of measures of the synthetic TOPSIS method	7. Four typological classes can be selected to define the investment activity of LGUs, based on the mean ($\overline{p}_i$) and standard deviation (s_{pi}) of the synthetic indicator (pi)	Class I (high)	$p_i \geq \overline{p}_i + s_{pi}$
		Class II (medium-high)	$\overline{p}_i - s_{pi} \leq p_i < \overline{p}_i$
		Class III (medium-low)	$\overline{p}_i - s_{pi} \leq p_i < \overline{p}_i$
		Class IV (low)	$p_i < \overline{p}_i - s_{pi}$

Source: own elaboration based on: Wysocki (2020), Kozera, Wysocki (2016), Głowicka-Wołoszyn et al. (2018), Bąk, Dawidowicz (2023).

The research included 8 stages, from the choice of indicators characterizing investment activity, through the determination of a synthetic index using the TOPSIS multi-criteria method, to the determination of classes of investment attractiveness of cities with powiat status in the Silesian Voivodeship.

4. Results

Investment activities of cities with powiat status in the Silesian Voivodeship slowed down in 2019-2021, as the share of property expenditures in total expenditures (X1) decreased from 15.6% to 14%, as shown in the data of Table 2. The year 2020 was characterized by a marked reduction in investment activities, with the highest value of the X1 index recorded by Gliwice (22.9%) and the lowest by Ruda Śląska (6.8%).

Table 2.

Indicator of investment activity of cities with powiat status in Poland in 2019-2021

Specification	2019							2020							2021						
	X1	X2	X3	X4	X5	X6	X7	X1	X2	X3	X4	X5	X6	X7	X1	X2	X3	X4	X5	X6	X7
Bielsko-Biała	22.34	76.51	74.79	72.08	138.74	1,410.75	1,227.59	20.81	78.96	79.8	74.21	134.76	1,807.96	1,316.68	20.19	88.37	104.94	105.73	94.58	2,240.31	1,946.66
Bytom	10.82	96.29	87.60	84.16	118.82	690.41	519.47	10.46	94.22	94.36	93.05	107.47	776.21	621.46	17.14	88.41	110.78	111.77	89.47	1,531.77	1,415.3
Chorzów	13.82	71.43	86.83	83.78	119.36	1,004.72	787.14	12	107.17	111.99	113.75	87.91	1,055.33	934.6	10.63	185.98	213.45	237.44	42.12	2,009.45	1,845.13
Częstochowa	11.70	87.06	84.97	81.96	122.00	758.43	609.75	10.19	77.11	91.67	89.67	111.51	801.12	632.03	8.21	160.99	163.96	188.91	52.94	1,344.67	1,114.58
Dąbrowa Górnicza	14.62	129.19	153.76	166.59	60.03	1,899.37	1,661.35	18.39	100.43	130.27	135.57	73.77	2,190.76	1,940.37	16.23	160.98	187.74	204.63	48.87	2,983.93	2,727.33
Gliwice	26.01	76.60	96.03	95.75	104.44	2,075.32	1,930.78	22.92	103.49	111.65	112.53	88.87	2,428.96	2276.1	27.08	94.58	133.6	136.05	73.5	3,676.58	3,489.39
Jastrzębie-Zdrój	12.90	96.81	274.65	274.74	36.40	2,056.94	2,056.58	16.7	101.13	206.92	213.53	46.83	2,436.87	2,368.35	12.08	145.63	279.68	295.01	33.9	2,445.2	2,376.49
Jaworzno	10.03	141.33	128.52	137.46	72.75	1,034.13	841.94	12.21	113.14	133.08	140.64	71.1	1,382.21	1,188.95	12.45	160.6	187.91	206.81	48.35	2,108.9	1,910.3
Mysłowice	11.94	102.81	121.72	123.36	81.06	897.80	845.83	11.04	135.91	153.52	155.42	64.34	1,107.93	1,083.09	10.83	109.98	191.27	198.57	50.36	1,690.36	1,624.95
Piekary Śląskie	18.49	81.86	103.97	104.43	95.76	1,297.81	1,167.50	11.25	98.16	133.65	140.06	71.4	1,097.88	966.37	11.04	148.47	168.24	182.13	54.9	1,412.22	1,270.19
Ruda Śląska	12.65	110.75	101.20	101.45	98.58	925.63	768.55	6.84	180.52	135.13	147.61	67.75	771.84	622.15	7.97	156.56	166.74	188.24	53.12	1,209.29	1,032.57
Rybnik	26.90	68.67	99.87	99.87	100.13	2,034.34	2,027.78	15.28	127.51	183.15	183.75	54.42	1,975.3	1,967.54	15.38	108.02	181.06	183.47	54.5	2,154.67	2,120.26
Siemianowice Śląskie	8.40	62.38	115.12	117.88	84.83	667.02	577.42	11.58	105.05	131.32	134.98	74.08	1,130.88	1,040.77	10.97	120.82	118.34	132.26	75.61	1,591.14	1,010.99
Sosnowiec	11.95	97.60	103.92	104.81	95.41	807.63	664.46	16.46	116.64	123.75	127.19	78.62	1,435.26	1,288.79	13.95	92.67	121.63	123.73	80.82	1,257.42	1,165.76
Świętochłowice	4.38	178.36	157.40	165.04	60.59	389.38	360.30	7.54	244.78	249.06	266.1	37.58	1,193.47	1,144.31	13.7	123.33	188.78	195.1	51.26	1,848.03	1,782.95
Tychy	24.78	88.96	116.24	118.33	84.51	2,381.17	2,147.66	20.91	104.76	115.97	119.12	83.95	2,224.14	1,908.65	17.52	111.22	150.86	155.28	64.4	2,265.31	2,145.42
Zabrze	15.59	75.88	61.61	50.71	197.18	736.81	472.35	12.91	84.82	64.02	52.32	191.13	703.2	433.74	11.87	121.67	116.59	122.7	81.5	1,256.05	966.02
Żory	19.77	66.82	56.98	44.84	223.00	937.72	575.61	18.29	84.81	64.87	53.58	186.65	1,079.84	674.83	13.47	135.09	117.16	122.42	81.69	1,442.09	1,153.34
Katowice	20.22	78.99	168.22	174.56	57.29	2,887.24	2,741.26	19.54	89.86	166.77	173.15	57.75	2,977.79	2,822.03	15.31	123.2	216.84	231.51	43.2	3,181.02	3,017.48
medium	15.6	94.1	115.4	115.9	102.7	1.310.1	1,157.0	14.5	113.1	130.6	133.0	88.9	1,504.1	1,327.9	14.0	128.2	164.2	174.8	61.8	1,981.5	1,795.5
max	26.9	178.4	274.7	274.7	223.0	2,887.2	2,741.3	22.9	244.8	249.1	266.1	191.1	2,977.8	2,822.0	27.1	186.0	279.7	295.0	94.6	3,676.6	3,489.4
min	4.4	62.4	57.0	44.8	36.4	389.4	360.3	6.8	77.1	64.0	52.3	37.6	703.2	433.7	8.0	88.4	104.9	105.7	33.9	1,209.3	966.0
standard deviation	6.1	28.3	47.7	51.2	44.6	681.2	693.1	4.6	38.6	45.7	51.3	40.9	663.4	669.9	4.4	27.9	44.2	48.9	17.3	682.5	705.0
variability coefficient	39.0	30.1	41.3	44.1	43.4	52.0	59.9	31.8	34.2	35.0	38.6	46.0	44.1	50.4	31.1	21.8	26.9	28.0	27.9	34.4	39.3

Source: own elaboration.

Over the period under review, progression was observed for self-financing (from 94.1% to 128.2%), financial potential (115.4% to 164.2%), and investment potential (from 115.9% to 174.8%). The indicators illustrated in Table 1 also demonstrate that the COVID-19 pandemic years were distinguished by the low rate of utilization of investment potential and its sharp regression (from 102.7% to 61.8%). The investment potential was used to the smallest extent in 2019 (36.4%) and 2021 (33.9%) by Jastrzębie Zdrój, and in 2020 (37.6%) by Świętochłowice.

Based on the indicators illustrated in Table 2, a synthetic measure of p_i was calculated using the TOPSIS method, and the results are presented in Table 3. The synthetic index of investment attractiveness in cities with powiat status in the Silesian Voivodeship underwent regression in most of the units studied primarily in 2020, a period of greatest disturbance in the country but also in the world caused by the outbreak of a pandemic. Katowice recorded the highest p_i in 2020 at 0.5798, and Bytom saw the lowest (0.2160). In 2021, the values of the measure were lower with respect to 2020 in as many as 11 cities out of 19, such as Jastrzębie Zdrój, Mysłowice, Ruda Śląska, Rybnik, Siemianowice Śląskie, Sosnowiec, Świętochłowice, Tychy, Zabrze, Żory and Katowice.

Table 3.
The value of the TOPSIS synthetic indicator and the classes of investment activity of cities with powiat status in Poland in 2019-2021

Specification	2019			2020			2021		
	S_i^+	S_i^-	Pi	S_i^+	S_i^-	Pi	S_i^+	S_i^-	Pi
Bielsko-Biała	0.2600	0.1618	0.3836	0.2573	0.1764	0.4068	0.2653	0.1919	0.4198
Bytom	0.3167	0.0864	0.2142	0.3192	0.0879	0.2160	0.3054	0.1470	0.3250
Chorzów	0.2963	0.1027	0.2574	0.2904	0.0966	0.2497	0.2468	0.1836	0.4265
Częstochowa	0.3114	0.0899	0.2240	0.3231	0.0895	0.2169	0.3142	0.1153	0.2684
Dąbrowa Górnicza	0.2085	0.1933	0.4812	0.2207	0.1919	0.4651	0.1786	0.2256	0.5581
Gliwice	0.2163	0.2191	0.5032	0.2099	0.2289	0.5216	0.1892	0.3045	0.6168
Jastrzębie-Zdrój	0.1914	0.2696	0.5848	0.2030	0.2471	0.5490	0.2163	0.2385	0.5244
Jaworzno	0.2777	0.1214	0.3042	0.2672	0.1195	0.3090	0.2389	0.1596	0.4005
Mysłowice	0.2854	0.1035	0.2661	0.2737	0.1216	0.3075	0.2784	0.1187	0.2989
Piekary Śląskie	0.2601	0.1367	0.3444	0.2894	0.1014	0.2594	0.2962	0.1121	0.2746
Ruda Śląska	0.2900	0.1016	0.2594	0.3084	0.1140	0.2700	0.3229	0.1120	0.2576
Rybnik	0.2163	0.2248	0.5096	0.2129	0.2000	0.4844	0.2346	0.1526	0.3941
Siemianowice Śląskie	0.3209	0.0762	0.1918	0.2833	0.1045	0.2695	0.3205	0.1061	0.2487
Sosnowiec	0.3012	0.0907	0.2315	0.2553	0.1343	0.3447	0.3243	0.1156	0.2628
Świętochłowice	0.3256	0.1382	0.2980	0.2646	0.2313	0.4664	0.2544	0.1346	0.3460
Tychy	0.1971	0.2390	0.5481	0.2196	0.1982	0.4744	0.2319	0.1600	0.4082
Zabrze	0.3207	0.1389	0.3022	0.3322	0.1698	0.3382	0.3314	0.1156	0.2586
Żory	0.3106	0.1695	0.3531	0.3039	0.1816	0.3741	0.3104	0.1265	0.2895
Katowice	0.1787	0.2914	0.6199	0.2007	0.2770	0.5798	0.1791	0.2454	0.5781
Min	0.1787	0.0762	0.1918	0.2007	0.0879	0.2160	0.1786	0.1061	0.2487
Max	0.3256	0.2914	0.6199	0.3322	0.277	0.5798	0.3314	0.3045	0.6168
Medium	0.2676	0.1555	0.3619	0.2650	0.1617	0.3738	0.2652	0.1613	0.3767

Source: own elaboration.

The clear leader in the ranking, with class 1 investment activity, was the Katowice metropolitan area in 2019-2020, although it should be noted that the COVID-19 pandemic affected the reduction in the value of the TOPSIS synthetic measure from 0.6199 to 0.5781 in 2019-2021, as shown in the data in Table 4. Cities such as Jastrzębie Zdrój, Tychy, Rybnik, and Gliwice also stood out with high values of the synthetic measure: Jastrzębie Zdrój, Tychy, Rybnik, and Gliwice in 2019, Jastrzębie Zdrój and Gliwice in 2020, and Gliwice (the leader, with 1st place in the ranking), Jastrzębie Zdrój, and Dąbrowa Górnicza in 2021.

Table 3.
The value of the TOPSIS synthetic indicator and the classes of investment activity of cities with powiat status in Poland in 2019-2021

Specification	Pi	Ranking 2019	Class	Pi	Ranking 2020	Class	Pi	Ranking 2021	Class
Bielsko-Biała	0.3836	7	2	0.4068	8	2	0.4198	6	2
Bytom	0.2142	18	4	0.2160	19	4	0.3250	11	3
Chorzów	0.2574	15	3	0.2497	17	4	0.4265	5	2
Częstochowa	0.2240	17	4	0.2169	18	4	0.2684	15	3
Dąbrowa Górnicza	0.4812	6	2	0.4651	7	2	0.5581	3	1
Gliwice	0.5032	5	1	0.5216	3	1	0.6168	1	1
Jastrzębie-Zdrój	0.5848	2	1	0.5490	2	1	0.5244	4	1
Jaworzno	0.3042	10	3	0.3090	12	3	0.4005	8	2
Mysłowice	0.2661	13	3	0.3075	13	3	0.2989	12	3
Piekary Śląskie	0.3444	9	3	0.2594	16	4	0.2746	14	3
Ruda Śląska	0.2594	14	3	0.2700	14	3	0.2576	18	4
Rybnik	0.5096	4	1	0.4844	4	2	0.3941	9	2
Siemianowice Śląskie	0.1918	19	4	0.2695	15	3	0.2487	19	4
Sosnowiec	0.2315	16	3	0.3447	10	3	0.2628	16	3
Świętochłowice	0.2980	12	3	0.4664	6	2	0.3460	10	3
Tychy	0.5481	3	1	0.4744	5	2	0.4082	7	2
Zabrze	0.3022	11	3	0.3382	11	3	0.2586	17	4
Żory	0.3531	8	3	0.3741	9	2	0.2895	13	3
Katowice	0.6199	1	1	0.5798	1	1	0.5781	2	1

Source: own elaboration.

Figure 1 illustrates the layout of investment activity classes and the number of corresponding towns, in 2019-2021.
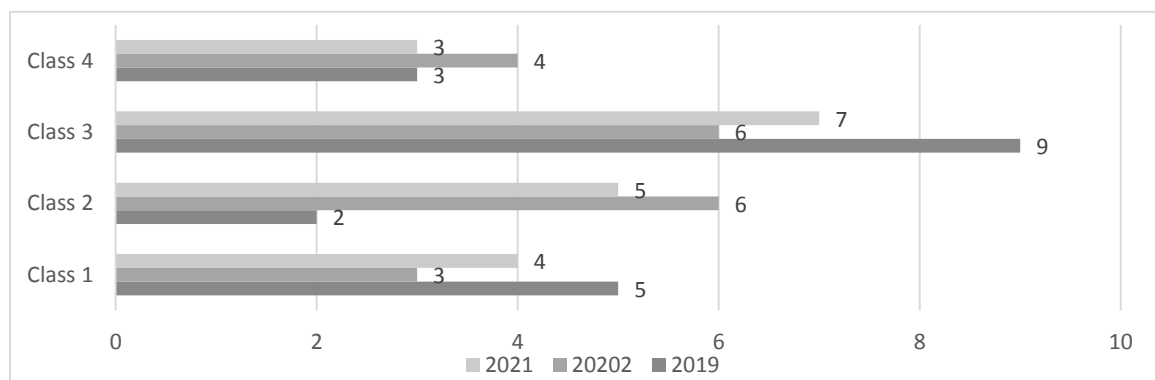

Figure 1. Investment activity classes and number of cities with powiat status in the Silesian Voivodeship in 2019-2021.

Source: own elaboration.

In 2019-2021, a fairly large variation in the investment activity classes of cities with powiat status in the Silesian voivodeship was evident. The largest number of them were classified as class 3, with as many as 9 in 2021. In 2020, the units studied were mainly characterized by class 2 (6 cities) and class 3 (6 cities), with only 3 units ranked in class 1, including the Katowice metropolitan area, which, along with Gliwice and Jastrzębie Zdrój, dominated over the entire period in terms of investment activity.

5. Discussion

The investment activities of local governments are the subject of many studies, and they differ in their scope and research methods. Research on investment attractiveness was conducted by Snieška and Zykiene (2015), while Windhyastiti, et al. (2019) attempted to assess how to improve the investment attractiveness of cities. Kobiałka and Kubik (2018) conducted research on evaluating the effectiveness of investment activities in municipalities in Poland. The authors used the non-parametric data envelopment analysis (DEA) method. The expenditures and effects of investment activities in rural and urban-rural municipalities in 2007-2013 were compared. Using a similar method, Skica et al. (2019) compiled a ranking of municipalities, taking into account their level of efficiency and development. The survey covered 2044 Polish municipalities in 2016 using the DEA model. The authors noted that the DEA method allowed for setting goals for inefficient municipalities, which should monitor and regularly evaluate progress toward their goals. Inefficient municipalities can improve their efficiency by following the technological example of selected benchmarks. Wojtowicz and Hodzic (2021), on the other hand, evaluated the relationship between fiscal stability and efficiency using the example of large cities in Poland over the period 2008-2019. To obtain empirical results, the authors attempted data envelopment analysis and panel data analysis and constructed a fiscal sustainability index using a multivariate approach. Conclusions based on a sample of 66 towns with powiat status proved that there was a negative relationship between budget stability and the efficiency of the units studied.

Another tool that is frequently used to evaluate municipal investment activities is TOPSIS multi-criteria analysis. Among others, Bąk and Dawidowicz (2023) used this method to assess the financial condition of LGUs (voivodships, powiats and communes in 2018-2020) by examining 15 indicators. Przybyła et al. (2020) identified and evaluated the investment activity of Poland's largest cities between 2004 and 2015. Based on such indicators as cities' investment expenditures per capita, cities' investment expenditures as a percentage of their total expenditures, and cities' investment expenditures as a percentage of their revenues, these researchers constructed synthetic measures. They concluded that while a city's status and income potential are to some extent determined by its investment activities, there are clear

examples showing that appropriate local policies can modify these determinants. Furthermore, Zawora (2018) made a comparison of the financial conditions of municipalities in the Podkarpackie Voivodeship with other Polish voivodeship, also based on a multivariate comparative analysis. Kozera (2021) conducted research from 2007 to 2018 on assessing the level and diversity of investment activity of large cities (regional centers) in Poland. For this purpose, she used the TOPSIS linear normalization method and found that the highest level of investment activity was recorded in Białystok, Gdańsk, Rzeszów, Warsaw, and Olsztyn.

The research undertaken in this study is concerned with evaluating the investment activities of cities with powiat status in Silesia, one of the most urbanized regions of Poland. The research question posed in the paper, which asked whether the COVID-19 pandemic affected the investment activity of the units studied, was confirmed. First of all, in the years of the COVID-19 pandemic (2019-2021), cities with powiat status in the Silesian Voivodeship were characterized by a slowdown in investment activity, and an increase in such measures as the level of self-financing, financial potential, and investment potential. One of the effects of pandemic decisions was the underutilization of the investment potential of the units and the classification of part of them into lower classes of investment activity based on the TOPSIS synthetic measure. Further stages of the research should focus on the analysis of the post-pandemic period, taking into account in the evaluation, among other things, the impact of inflation on the results obtained by LGUs, or the challenges posed by delays in accessing funds under the National Recovery Plan from EU funds.

6. Conclusion

Investment activity is inextricably linked to the propensity to invest and to the capacity held by LGU bodies in this regard (Filipiak, 2017). Czempas (2012) defines LGU's propensity to invest as a phenomenon in which current expenditures are reduced so that physical resources can be multiplied in the future. Włodarek (2014) points out that the investment capacity of an LGU occurs when the local government has its own funds and legal ability to raise external funds and there is an opportunity that the handling of long-term investments will not negatively affect the implementation of current tasks. The size of the investments made in financial terms is presented in the budget, being the category of capital expenditures (Sekuła, Śmiechowicz, 2018). High investment expenditures are considered a development stimulant (Zygmunt, 2013).

Sotoła (2015) argues that local government investments are seen as the most widely used and the most effective instrument for ensuring development. However, during the pandemic years, local governments did not fully utilize their investment capacity, as confirmed by the research presented in this study. The main goal of the study was achieved and allowed for

answering the research questions posed. In 2019-2021, the investment policy pursued by the cities with powiat status in the Silesian Voivodeship was aimed at accumulating both financial and investment potential and reaching a high level of self-financing. The underutilized investment potential in the units studied and its regression in the years under review were definitely not conducive to stimulating their local development. The COVID-19 pandemic led to changes in the classification of cities into investment activity classes, with the largest number of cities in 2021 (9) found in class 3. The leaders in terms of active investment policies were Katowice and Gliwice.

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