



DE GRUYTER
OPEN

Folia Oeconomica Stetinensia

DOI: 10.1515/fofi-2015-0042



INCOME ELASTICITY OF CULTURE EXPENSES IN POLISH PROVINCES

Adam Mateusz Suchecki, Ph.D.

*University of Lodz
Faculty of Economy and Sociology
Department of Public Finance
Rewolucji 1905 r. no. 39, 90-214 Łódź, Poland
e-mail: adam.suchocki@uni.lodz.pl*

Received 1 June 2015, Accepted 5 December 2015

Abstract

Decentralisation of public finance in Poland was an important element of changes in the political system of the country. As a result, some tasks of the state were transferred to the local government level. The purpose of this paper is to analyse the budget expenses on cultural tasks incurred by local government units in Poland in the years 2003–2012 and outlines the legal frameworks of the local government financial management in Poland. Using a model based on the double logarithmic function, the author tests a hypothesis, according to which the broadly understood culture might be regarded as a necessity or luxury good, depending on the value of the coefficient of elasticity of the expenses on culture incurred by local government units in relation to the gross regional product.

Keywords: Gross regional product, culture, cultural goods, double logarithmic function, provinces, expenditures, local finances

JEL classification: Z1, H7

Introduction

The case of the source of the public financial support for culture determinants, its volume and effectiveness seems to be the crucial problem for the cultural economists. It is even more important in Europe, where in most countries the public and self government support for this sector plays the major role (van der Ploeg, 2006). The scope of the methods of financing of culture and its determinants depends on the cultural organisation and finance model in the particular countries (Golinowska, 1991).

The works by M. Getzner were devoted to a detailed analysis of the factors influencing the size of public spending on culture in the European Union countries (in particular in federal states such as Austria and Germany). In his works the author gave the political-economic factor as one of the main factors affecting the amount of public spending on culture, stating at the same time that the amount of the gross domestic product in the cases examined by him did not determine to a significant extent the amount of spending on culture (Getzner, 2015). A similar position was presented by Ch. Dalle Nogale and M.M. Galizzi (2015).

Opinions similar to those presented above are an exception to the conclusions of most studies. In most cases the authors find evidence of the importance of the amount of the gross domestic product as a factor determining the size of expenditure of state and local government units on culture (Ratzenböck, Honecker, Lungstraß, 2012; Schulze, Ursprung, 2000; Frey, 2000; Rushton, 2007; Noonan, 2007).

Decentralisation of public finance in Poland was an important element of changes in the political system of the country. As a result, some tasks of the State were transferred to the local level. These tasks covered the field of culture also, and were defined as the own tasks of local government units. The change forced the local authorities to finance these tasks from their own funds.

The purpose of this paper was to analyse the budget expenses on cultural tasks incurred by local government units in Poland in the years 2003–2012 and to outline the legal frameworks of the local government financial management in Poland. In the research the analysis of expenses incurred by the provinces on culture in the years 2003–2012 was included, taking into account the types of the cultural institutions. Using double-logarithmic single-equation model, a hypothesis was tested with an estimation of coefficients of income elasticity of demand for culture in Poland.

1. Background information on local government budgets in Poland

The development of the Polish local government and the fundamentals of its financial management started fourteen years ago. This process was initiated by the Local Government Act of 8 March 1990 and supplemented by numerous detailed acts. Since 1999 communal (Polish Journal of Laws, 2001), as well as district and provincial (Polish Journal of Laws, 2001) government units have been responsible for the organization of cultural activities in Poland. They were obliged to conduct these activities within the framework of their own tasks. This was reflected in the legal regulations concerning the local government revenue sources.

The local government revenue sources were defined in the Polish Constitution and in the Local Government Revenue Act of 13 November 2003. According to the provisions included in these documents, the revenue of local government units in Poland is divided to their own income, general and intentional subsidies. The revenue which is neither general nor intentional subsidy should be classified as their own income. The division of the revenue sources corresponds to the division of public tasks implemented by local authorities. It should be also mentioned that the local government units' own tasks are financed from their own income, the own tasks guaranteed by the state (e.g. culture) are financed from their own income and from the general subsidies, and the intentional tasks are financed from the intentional subsidies (Wrona, 2011).

The budget resolution, which includes the budget of a given unit and attachments, constitutes a basis for the local government financial management. Budget expenses of a particular local government unit are intended in particular for the implementation of its own tasks, for tasks performed together with other local government units, as well as for the in-kind or financial assistance given to other units. In addition, local government units may receive from the budget, as a form of financial assistance, product or producer subsidies, as well as intentional subsidies (Polish Journal of Laws, 2009).

The Public Finance Act of 27 August 2009 introduced performance-based budget elements, which are considered as a basis for the development of the State multi-year financial plan. Recently, these provisions apply only to the government subsector. Local government units, despite the lack of legal regulations, to a certain extent, use the performance-based budget, while it covers projects co-financed from the EU budget. In case of local government units, the performance-based budget is a result-oriented budgeting method, in which the expenses take the form of tasks, for which one develops relevant targets and measures. At the local government level, the performance-based budget is called the Local Government Result Budget (LGRB). It is a budget in which the local government management is based on information about the results

obtained from expenses incurred on particular budget tasks. This budget can also be understood as an expenditure planning method, in which each increase has to result in a production growth or improved performance. The budgeting process with the application of the LGRB method is based on attempts to improve the process of meeting the social needs with the help of additional funds, won for the implementation of a particular task (Lubińska, 2011).

The Public Finance Act also introduced elements of the performance-based budget to the local level in form of a multi-year financial forecast, according to which it is necessary to define current and material multi-year projects. It is also significant to determine the purpose of each project, the organisational unit responsible for the project's implementation and coordination, the period of the implementation, along with the total financial limits in particular years and limits of obligations.

The provisions of the Public Finance Act do not link directly to the long-term financial forecast with the performance-based budget, because not all local authorities units are eligible to implement the solutions used in the performance-based budget on a full scale. This is caused with the diversity of the units in terms of their size and organisational structure. However, in order to ensure the consistency of the budget with the multi-year financial forecast, it is necessary to connect them by rendering the budget with the form of tasks.

In a given local government unit, depending on the level of application of the performance-based budget methods, one can distinguish three variants of connecting the multi-year financial forecast with the budget:

- the local government budget is managed with respect to the performance-based budget principles,
- the local government budget is managed with the application of the performance-based budget elements,
- the local government budget contains no elements of the performance-based budget.

The first variant is the simplest solution to the problem of linking the long-term financial forecast with the budget of a particular local government unit. When managing its financial matters according to the performance-based budget principles, the unit divides its activities to particular tasks, thanks to which it meets the statutory requirements relating to the inclusion of these tasks in the long-term forecast. It is only necessary to transform each task into parts suitable for the operating, investment or capital budget.

In the second variant, only certain tasks of a given local government unit are covered by standardisation. In most cases, these tasks include investments and European projects.

By placing some activities outside the project category, the unit becomes unable to transform in a simple way the planned public tasks into elements of the forecast.

The last variant implies the need to transpose the traditional budget into particular items of the forecast. The main criterion for the division of particular incomes and expenses will be their classification by the budget and their particular components. This indicates the transformation of the classical budget into budgets present in the long-term financial forecast, basing on the requirements of the Public Finance Act, according to which the financial forecast will not be ordering particular tasks, but will only preserve its formal and legal dimension, resulting from the requirements of the Act (Lubińska, 2011).

2. Data analysis

The analysis of expenses incurred on culture by local government units covers a period from 2003 to 2012 and compares expenses of provinces in four selected years: 2003, 2006, 2010 and 2012. This time horizon has been taken for two reasons: first – the public administration in Poland has existed in its present form since year 2003, second – after 2012 public statistics presentation methods have been changed. Statistical data according to the selected sections of the budget classification of expenditure on culture in those years are presented in Table 1.

Table 1. Local government units expenses on culture and national heritage protection

Provinces	Total expenditure of local government units on culture in PLN thous.	Per-capita expenditure of local government units on culture in PLN	Expenditure on particular sections in PLN thous.					Number of inhabitants	Gross regional product in current prices in PLN thous.
			museums as well as protection and care of historic monuments	libraries	community centers and houses, day-care rooms and clubs	theatres	other		
1	2	3	4	5	6	7	8	9	10
2003									
Poland	2,629,085	68.84	379,085	683,579	715,347	413,278	437,796	38,190,608	843,156
Dolnośląskie	250,383	86.39	37,773	53,395	61,208	50,968	47,039	2,898,287	65,552
Kujawsko-pomorskie	126,379	61.11	17,708	31,674	31,412	22,734	22,851	2,068,058	40,916
Lubelskie	126,189	57.59	19,741	40,387	40,483	10,566	15,012	2,191,162	34,198
Lubuskie	64,178	63.62	7,014	16,623	27,344	4,114	9,083	1,008,771	19,254
Łódzkie	194,483	74.88	32,563	42,088	42,452	48,050	29,330	2,597,262	52,977
Małopolskie	226,661	69.68	31,763	50,042	75,208	31,613	38,035	3,252,885	61,531
Mazowieckie	374,825	72.98	44,779	107,092	83,930	91,421	47,603	5,135,996	176,073

1	2	3	4	5	6	7	8	9	10
Opolskie	64,993	61.57	8,414	17,710	25,715	6,134	7,020	1,055,595	18,532
Podkarpackie	124,676	59.45	23,637	33,951	44,768	4,115	18,205	2,097,157	32,780
Podlaskie	71,370	59.22	9,487	17,779	22,690	8,277	13,137	1,205,167	20,210
Pomorskie	163,075	74.50	29,199	34,281	33,788	25,551	40,256	2,188,926	47,445
Śląskie	335,255	71.10	43,767	98,176	85,435	40,253	67,624	4,715,260	113,454
Świętokrzyskie	60,744	47.03	10,051	18,254	16,698	3,546	12,195	1,291,601	22,289
Warmińsko-mazurskie	85,779	60.03	13,100	25,830	26,778	6,079	13,992	1,428,936	24,868
Wielkopolskie	247,216	73.58	37,719	64,279	58,083	44,361	42,774	3,359,826	77,600
Zachodniopomorskie	112,879	66.55	12,370	32,018	39,355	15,496	13,640	1,696,153	35,477
2006									
Poland	4,239,141	111.17	792,788	881,607	1,106,784	614,726	843,237	38,125,500	1,060,031
Dolnośląskie	392,970	136.25	82,076	69,231	106,751	56,756	78,156	2,884,245	85,774
Kujawsko-pomorskie	241,458	116.85	42,352	41,410	51,647	67,137	38,912	2,066,429	50,217
Lubelskie	180,756	83.10	36,180	49,401	58,344	15,094	21,737	2,175,255	40,849
Lubuskie	104,258	103.39	13,039	21,326	44,627	5,578	19,688	1,008,420	24,942
Łódzkie	228,450	88.84	46,144	46,797	57,522	46,141	31,846	2,571,539	65,628
Małopolskie	378,994	115.98	84,102	68,003	95,832	59,303	71,755	3,267,731	78,789
Mazowieckie	780,899	151.20	173,979	156,456	134,896	164,535	151,031	5,164,614	229,212
Opolskie	120,230	115.12	19,592	24,032	42,548	10,654	23,404	1,044,348	23,338
Podkarpackie	184,699	88.08	38,571	41,869	66,228	5,401	32,630	2,096,972	39,894
Podlaskie	120,129	100.31	15,764	22,185	37,108	9,240	35,832	1,197,611	24,427
Pomorskie	260,068	118.16	65,364	39,344	50,786	28,728	75,846	2,201,066	60,250
Śląskie	493,897	105.60	72,041	133,667	115,709	60,506	111,974	4,676,982	137,959
Świętokrzyskie	92,269	71.98	12,846	22,414	32,307	4,922	19,779	1,281,791	27,084
Warmińsko-mazurskie	138,459	97.02	20,441	31,601	39,716	10,087	36,614	1,427,092	29,977
Wielkopolskie	325,711	96.52	48,029	74,585	90,456	49,882	62,758	3,374,648	98,806
Zachodniopomorskie	195,894	115.67	22,266	39,286	82,306	20,761	31,275	1,693,530	42,887
2010									
Poland	7,006,228	183.47	1,216,886	1,145,187	2,224,730	691,804	1,727,621	38,529,900	1,416,585
Dolnośląskie	648,662	225.46	108,195	84,013	220,329	58,970	177,155	2,877,060	116,367
Kujawsko-pomorskie	347,588	167.95	88,684	55,522	102,676	32,778	67,928	2,069,592	65,029
Lubelskie	319,356	148.20	42,723	70,585	113,121	17,584	75,343	2,154,899	53,820
Lubuskie	243,035	240.46	29,095	33,113	95,916	6,655	78,256	1,010,709	31,985
Łódzkie	396,122	156.05	54,791	64,624	100,854	86,728	89,125	2,538,430	86,257
Małopolskie	619,790	187.57	170,967	84,344	152,262	54,125	158,092	3,304,313	104,842
Mazowieckie	1,205,208	230.33	220,117	206,179	412,665	156,682	209,565	5,232,527	309,729
Opolskie	216,874	210.58	43,737	32,312	89,257	10,777	40,791	1,029,889	31,271
Podkarpackie	311,265	148.03	58,251	56,232	123,246	8,272	65,264	2,102,716	53,400
Podlaskie	239,453	201.36	32,420	31,583	76,967	10,616	87,867	1,189,179	32,559
Pomorskie	427,837	191.38	68,195	55,611	87,453	59,784	156,794	2,235,537	80,329
Śląskie	713,775	153.88	120,907	144,151	175,403	62,503	210,811	4,638,517	184,720
Świętokrzyskie	209,347	165.06	34,833	31,743	65,579	6,791	70,401	1,268,308	36,609
Warmińsko-mazurskie	247,691	173.50	32,220	40,961	85,785	20,283	68,442	1,427,614	39,063

1	2	3	4	5	6	7	8	9	10
Wielkopolskie	538,386	157.69	71,344	100,994	176,437	66,509	123,102	3,414,205	134,187
Zachodniopomorskie	321,839	190.04	40,408	53,219	146,779	32,747	48,686	1,693,533	55,197
2012									
Poland	6,847,050	177.69	1,099,519	1,181,354	1,999,044	722,771	1844,362	38,533,300	1,596,378
Dolnośląskie	700,342	240.23	100,343	87,553	195,144	112,393	204,909	2,914,400	137,180
Kujawsko-pomorskie	318,382	151.77	76,824	56,665	95,078	32,915	56,900	2,096,400	70,913
Lubelskie	383,909	177.03	74,971	75,670	139,869	18,908	74,491	2,165,700	61,180
Lubuskie	172,544	168.65	34,945	31,262	76,746	7,098	22,493	1,023,300	35,018
Łódzkie	489,330	193.52	67,392	69,719	104,253	69,966	178,000	2,524,700	97,146
Małopolskie	544,234	162.44	88,551	90,767	150,955	62,904	151,057	3,354,100	118,170
Mazowieckie	936,498	176.92	196,262	191,316	225,561	135,392	187,967	5,301,760	361,524
Opolskie	167,184	165.15	28,581	29,855	69,187	10,015	29,546	1,010,200	33,217
Podkarpackie	305,963	143.72	59,963	61,276	121,053	7,340	56,331	2,130,000	59,011
Podlaskie	227,940	189.99	25,078	34,343	69,497	12,849	86,173	1,198,690	35,219
Pomorskie	500,040	218.67	60,463	64,515	125,533	58,492	191,037	2,290,100	91,280
Śląskie	807,301	174.72	132,246	152,544	177,845	72,691	271,975	4,615,870	202,679
Świętokrzyskie	172,196	135.00	24,718	34,090	63,856	6,444	43,088	1,274,000	38,969
Warmińsko-mazurskie	223,179	153.71	30,830	42,925	76,499	25,773	47,152	1,450,700	43,090
Wielkopolskie	551,818	159.54	61,582	102,291	181,228	57,830	148,887	3,462,200	150,344
Zachodniopomorskie	346,190	201.02	36,770	56,563	126,740	31,761	94,356	1,721,405	60,286

Source: own study on the basis of data from relevant statistical yearbooks of the Central Statistical Office.

Provincial budget expenses on culture and national heritage protection were growing steadily in the analysed period. In 2003 they amounted to PLN 2629 million, in 2006 to PLN 4,239 million and in 2010 to PLN 7006 million. The expenditure per-capita also grew from PLN 68.84 in the first analysed year to PLN 183.47 in the last year. The highest amounts in particular provinces were spent on the activities of community centers, day-care rooms and clubs. Over PLN 715 million was spent on that goal in 2003, nearly PLN 1107 million in 2006 and PLN 2225 million in 2010. These amounts prove importance of these cultural institutions in the cultural policy pursued by local government units. In the analysed period the least money was spent on musical theatres, operas and operettas.

The highest expenses on culture and national heritage protection in the years 2003–2010 were noted in Mazowieckie. In the analysed years, they amounted to (in million PLN): 375 in 2003, 781 in 2006, 1,205 in 2010 and 936 in 2012. The lowest amounts of funds spent on culture were noted in Świętokrzyskie, despite the fact, that the expenses of local government units in the analysed period were growing constantly. The data in table 1 show that in 2003 the expenses amounted to PLN 60.744 million grew to PLN 92.269 million in 2006, reached the amount of PLN 209.347 million in 2010 and decreased to PLN 172.196 in 2012.

Taking into account the per-capita expenditure on culture, it should be indicated that the difference in expenses level in Mazowieckie and Świętokrzyskie in the analysed years was changing. In 2003 it amounted to PLN 25.95, in 2006 it increased to the amount of PLN 79.22, in 2010 it decreased to the amount of PLN 65.27 and PLN 41.92 in 2012. The Śląskie province came second, considering the total expenditure on culture, whereas Dolnośląskie was ranked second in terms of the per-capita level of expenditure.

3. Methodology and empirical results

To examine the overall impact of the changes in the gross regional product (GRP) on the amount of expenses on culture incurred by local government units in particular provinces, one applied a relevant double-logarithmic one equation models to estimate, evaluate and interpret the coefficients of elasticity, which can be used to assess particular decisions in the field of cultural policy.

In the case of cultural goods and services subject to the classic economic laws of supply and demand, one can assume that both the supply and demand for these goods is not significantly different from the supply and demand for other goods or services. What affects the different definition of this function is the special role of the price, which is assumed to be the amount of the costs incurred by the decision-makers. That is because the price of cultural goods and services is not only a simple combination of its economic value. They also consist of a cultural value. The economic value comprises any direct use values of the cultural good or service in question. The cultural value is multi-dimensional, unstable, contested, lacks a common unit of account, and may contain elements that cannot be easily expressed according to any quantitative or qualitative scale. The preferences of the individuals concerning a cultural good are likely to be formed by many of the same attributes of this good as those contributing to its cultural value, which implies that the economic value of the good is likely to be closely related to its cultural value in many cases (Throsby, 2003).

Consider a cultural good such as a heritage building. The assets may have an economic value which derives simply from its physical existence as a building and is irrespective of its cultural worth. But the economic value of the asset is likely to be augmented because of its cultural value. As we can see, the cultural value may give rise to the economic value. So, for example, individuals may be willing to pay for the embodied cultural content of this asset by offering a price higher than that which they would offer for the physical entity alone. There is also a different relationship between the economic and cultural value of cultural goods and

services. For example, the stock of existing music and literature has an immense cultural value, but not the economic one since they cannot be traded as assets (Throsby, 1999).

By analogy to the classical theory of demand, it is assumed that, depending on the value of the coefficient of elasticity of the expenses on culture incurred by local authority units in relation to GRP, broadly interpreted culture may be regarded as a necessity, intermediate or luxury good (Begg, 2003).

It should be noted, however, that the methods used by the authorities (regional or local) in decision-making cannot be fully similar to the decisions of consumers and individual producers. Therefore, in the present study, some hypotheses concerning the nature of the determinants of decisions on the size of the average expenditure on culture in the regions in selected periods were verified.

It is assumed that in addition to the regional gross domestic product, which is the basis for planning the level of the whole budget (total expenditure) in the provinces, the differences between expenditures on culture in particular provinces can be affected by the size of the region and population. In this study a hypothesis about the impact of this variable on the decisions on the expenditure on culture has been verified. In practice, three possible approaches can be outlined:

- (1) the number of residents may be included in the equation as an explanatory variable,
- (2) the dependent (expenditure on culture in regions CE) and explanatory (GRP) variables occur in the equation as per-capita in each province (CE/LM ; GRP/LM), or
- (3) the decisions of local authorities on total annual expenditures on culture are made on the basis of information about the formation of GRP per-capita that might better determine their budgetary possibilities.

In addition, the possibility of joint ventures between neighboring provinces to rationalise expenditure on culture are discussed. Such investments require cooperation, which can be defined as the establishment of spatial interaction to be included in the econometric equations in the form of the so-called spatial images of the dependent variable (spatial autoregression – SAR), the error term (spatial autocorrelation – SEM) or spatial images of explanatory variables (spatial cross-regression SCM).

We use space-time panel data on 16 Polish provinces during the period of 10 years (2003–2012). To eliminate changes in time resulting from inflation, the level of expenditure on culture and gross regional product has been expressed in constant prices from 2003 (through appropriate national price indices and the gross domestic product price deflator). When using the panel data of many years, some of the estimated equations also include the time variable T (by analogy to

the production function, taking into account the technical and organizational progress), which can express the impact of organisational and administrative changes resulting from changes in legislation in Poland after joining the EU structures in 2004, and the transition expenditure planning within performance budgeting.

The general form of the model describing the impact of changes in GRP on culture by province can therefore be written as follows:

$$CE_{it} = f(GRP_{it}, LM_{it}, T) + e_{it} \quad (1)$$

where:

- CE_{it} – expenditure on culture of the i -th region in year t in constant prices (2003 = 1),
- GRP_{it} – gross regional product of the i -th region in year t in constant prices,
- LM_{it} – number of inhabitants in the i -th region in year t ,
- T – time variable.

As already mentioned above, to estimate the coefficients of elasticity a double logarithmic single equation models was used:

$$\ln CE_{it} = a_0 + a_1 \ln GRP_{it} + a_2 \ln LM_{it} + a_3 T + e_{it} \quad (2)$$

Because of its properties, such a functional form allows for achieving a good fit of the theoretical model for non-linear empirical data, and allows the direct interpretation of the parameters as the coefficients of elasticity of local government expenditure on culture (average for the sample). The results of the estimation of different variants of the model of regional diverse expenditure on culture are presented in Table 2.

The estimation results presented in Table 2 are largely satisfactory from both an economic as well as statistical point of view. In contrast, because of the poor fit of the theoretical data per 1 inhabitant, it seems that the population of regions should rather be included as the independent variable in the expenditure equations.

The most stable results were obtained from the equations where the variables are expressed as the total value, without conversion to one person and without taking into account the number of inhabitants. This may indicate a certain routine in decision-making by local authorities in provinces regarding the allocation of the relevant parts of the budget for various purposes, including the expenses related to culture.

The estimated equations parameter coefficient of $\ln(GRP)$ variable is significant and the high values of the coefficients of determination provide a good explanation of shaping the total

expenditure on culture, by varying the value of the gross regional product. The obtained results indicate that in the studied period coefficients of total expenditure on culture relative to regional product in the selected years were less than unity. This means that the effect of the impact of the size of the region's spending on culture in total was less than proportional.

Table 2. The results of the estimation of parameters in the equations of total expenditure on culture by the regional government units

Sample (obs. used)	Dependent variable	Parameter estimates					R ² _{adj}
		Intercept	ln(<i>GRP</i>)	ln(<i>GRP/LM</i>)	ln(<i>LM</i>)	<i>T</i>	
2003 (16)	ln(<i>CE</i>)	2.317***	0.894***				0.948
2003 (16)	ln(<i>CE</i>)	2.545***	0.311*		0.781***		0.966
2003 (16)	ln(<i>CE/LM</i>)	-0.536-		0.477**			0.389
2006 (16)	ln(<i>CE</i>)	2.770***	0.878***				0.951
2006 (16)	ln(<i>CE</i>)	2.811***	0.718**		0.178-		0.949
2006 (16)	ln(<i>CE/LM</i>)	-1.731-		0.629**			0.487
2010 (16)	ln(<i>CE</i>)	4.712***	0.726***				0.959
2010 (16)	ln(<i>CE</i>)	4.682***	0.813***		0.693***		0.957
2010 (16)	ln(<i>CE/LM</i>)	1.862-		0.309*			0.112
2012 (16)	ln(<i>CE</i>)	4.057***	0.772***				0.920
2012 (16)	ln(<i>CE</i>)	4.143***	0.358*		0.582*		0.951
2012 (16)	ln(<i>CE/LM</i>)	2.154-		0.267*			0.108
2003–2012 (160)	ln(<i>CE</i>)	2.782***	0.849***			0.059***	0.936
	ln(<i>CE</i>)	2.810***	0.659***		0.261**	0.066***	0.943
	ln(<i>CE/LM</i>)	-1.069*		0.528***		0.071***	0.773
2003–2005 (80)	ln(<i>CE</i>)	2.133***	0.901**			0.087***	0.959
	ln(<i>CE</i>)	2.205***	0.591***		0.419***	0.102***	0.965
	ln(<i>CE/LM</i>)	-1.968**		0.608***		0.101***	0.787
2006–2012 (80)	ln(<i>CE</i>)	3.723***	0.796***			0.014-	0.918
	ln(<i>CE</i>)	3.751***	0.644***		0.210-	0.017-	0.919
	ln(<i>CE/LM</i>)	0.561-	0.407***			0.023*	0.252

*, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Source: own calculations.

The results of previous analyses indicated the existence of differences in the amounts of expenditure on various cultural activities in particular provinces. In the years 2003–2012 particular local government units also achieved different values of the gross regional product. When analysing the results, one can make an assumption about the unequal level of expenses incurred by local government units on culture in general and on specific types of activities. So it can be assumed that these categories of provincial budget expenditure are influenced by decisions related to the division of the generated gross regional product. To characterise this situation, similarly to the case of the total expenditure on culture, for each province the coefficients of

elasticity of the 2003–2012 expenditure on particular cultural institutions in relation to the total expenditure on culture were estimated by means of the double logarithmic model.

Table 3. Estimates of the expenditure elasticity coefficients on cultural institutions in relation to total expenses incurred by the regions in 2003–2012

	Estimates of the expenditure elasticities a_1 in: $\ln CE_X = a_0 + a_1 \ln CE + \varepsilon_X$				
	Museums	Libraries	Community centres	Theatres	Other cultural goods
Dolnośląskie	1.12***	0.46***	1.18***	0.37**	1.50***
Kujawsko-pomorskie	1.59***	0.55***	1.20***	0.31**	1.10***
Lubelskie	1.15***	0.55***	1.08***	0.36**	1.76***
Lubuskie	1.16***	0.43***	0.89***	0.46***	1.65***
Łódzkie	0.80***	0.52***	1.02***	0.81***	1.69***
Małopolskie	1.47***	0.53***	0.72***	0.62***	1.55***
Mazowieckie	1.24***	0.59***	1.35***	0.48**	1.38***
Opolskie	1.38***	0.51***	1.09***	0.43**	1.31***
Podkarpackie	1.18***	0.56***	1.14***	0.54**	1.17***
Podlaskie	0.87***	0.46***	0.88***	0.37**	1.76***
Pomorskie	0.63***	0.54***	1.04***	0.90***	1.46***
Śląskie	1.38***	0.50***	0.87***	0.63**	1.51***
Świętokrzyskie	0.93***	0.51***	1.13***	0.53***	1.39***
Warmińsko-mazurskie	0.99***	0.45***	1.10***	1.16***	1.41***
Wielkopolskie	0.78***	0.65***	1.36***	0.52**	1.38***
Zachodniopomorskie	1.04***	0.50***	1.11***	0.72***	1.53***

*, **, *** indicate statistical significance at the 10%, 5% and 1% levels respectively.

Source: own calculations.

The estimated coefficients of elasticity of the expenditure on particular types of cultural institutions in the provinces in relation to the total expenditure on culture presented in Table 3 are statistically significant.

The total expenses on culture incurred by local government units in relation to expenses incurred by the budgets of particular provinces are characterised by a relatively high ($E > 1$) values of the elasticity coefficients. A comparison of the values of these coefficients shows that in the years 2003–2012 a percentage (relative) change in the expenditure in these provinces results in a bigger percentage change in the total expenditure on culture in these provinces. Thus, the total expenditure on culture, being an economic good, indicates that in the analysed period culture was a luxury good for the decision-makers. In seven provinces a 1% increase in the expenditure on culture resulted in over 2% (from 2% to 2.41%) increase in the expenditure on cultural institutions. The highest values were recorded for the Podlaskie (2.41%) and Zachodniopomorskie (2.14%) provinces and the lowest was recorded for the Mazowieckie

province (1.39%). This dependence is slightly weaker in the case of the expenditure on community centers, day-care rooms and clubs. For those cultural institutions a 1% increase in the expenditure on culture resulted in a proportional increase in the expenditure on these institutions.

In the case of museums, in few provinces the values of the estimated coefficients of elasticity were less than unity – in the Pomorskie (0.63%), Wielkopolskie (0.78%) and Łódzkie (0.80%). The values of the coefficients of elasticity in the remaining provinces were more than unity, which indicates a flexible nature of the expenditure on museums in relation to the total expenses on culture incurred by local government units.

Conclusions

In Poland one can observe a relatively, high involvement of local government units in the culture financing process. This results from the current law which considers activities of local government units in the field of culture as their own tasks, which in turn means that these units have to use their own funds to finance such activities. Both the total expenditure and the per-capita expenditure on culture, spent from the local government budgets, were increasing steadily in the analysed period. The richest provinces (Mazowieckie, Śląskie and Dolnośląskie) are the leaders in this category, whereas the Świętokrzyskie incurred the least expenses on culture.

The total expenditure on culture derived from the local government budgets in the analysed period is inflexible in terms of the gross regional product. This means that a significant change in the amount of the regional product results only in slight changes in the total expenditure on culture. It means the local government units in their investment decisions and their cultural policies perceive culture as a basic good (Begg, 2003). The results of those estimations stands for the fact that local authorities expenditures on culture and its institutions do not influence the cultural value of cultural goods and services, which could augment the economic value of those goods. Concluding, it should be noted that the total expenditure on culture are inelastic in relation to the GRP, i.e. a change in the amount of the regional product results only in slight changes in the total expenditure on culture, and in their investment decisions and their cultural policies the local government units treat culture as a basic good.

References

- Begg, D. (2003). *Microeconomics* (pp. 113–114). Warsaw: PWE.
- Dalle Nogale, Ch., Galizzi, M.M. (2011). The political economy of cultural spending: evidence from Italian cities. *Journal of Cultural Economics*, 35, 203–231.
- Frey, B.S. (2000). *Arts and economics: Analysis and Cultural Policy*. Berlin: Springer.
- Getzner, M. (2015). [Cultural Politics: Exploring determinants of cultural expenditure](#). *Poetics*, 49, 62.
- Golinowska, S. (1991). *W poszukiwaniu nowych źródeł i form finansowania kultury* (pp. 5–6). Studia z krajów o gospodarce rynkowej. Warsaw: Instytut Kultury.
- Lewis, G., Rushton, M. (2007). Understanding state government appropriations for the arts: 1976–1999. *State Local Government Review*, 39, 107–114.
- Lubińska, T. (2011). *Kierunki modernizacji zarządzania w jednostkach samorządu terytorialnego* (pp. 180–181). Warsaw: Difin.
- Noonan, D. (2007). Fiscal pressures, institutional context and constituents: a dynamic model of state's arts agency appropriations. *Journal of Cultural Economics*, 31, 239–310.
- Ploeg, F. van der (2006). The Making of Cultural Policy: A European Perspective. In: V.A. Ginsburgh, D. Throsby (eds.), *Handbook of the Economics of Art and Culture*, Vol. 1, Elsevier: 1200–1203.
- Polish Journal of Laws 2001, No. 142, item 1590.
- Polish Journal of Laws 2001, No. 142, item 1592.
- Polish Journal of Laws 2009, No. 175, item 1240.
- Ratzenböck, V., Honecker, F.-O., Lungstraß, A. (2012). *Cultural Policies and Trends in Europe*. Austria: Historical Perspective – Cultural Policies and Instruments.
- Schulze, G.G., Ursprung, H.W. (2000). La donna e mobile – or is she? Determinants of public support for the performing arts. *Public Choice*, 102, 131–149.
- Throsby, D. (1999). Cultural Capital. *Journal of Cultural Economics*, 23, 8–9.
- Throsby, D. (2003). Determining the Value of Cultural Goods: How Much (or How Little) Does Contingent Valuation Tell Us? *Journal of Cultural Economics*, 27, 279–281.
- Wrona, T. (2011). Doświadczenia 20 lat samorządu terytorialnego – stan finansów samorządowych. *Samorząd Terytorialny*, 7–8, 5.