New Public Management and Its Influence on Museum Performance: The Case of Czech Republic[*]

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Abstract

The article analyzes the influence of particular instruments of the New Public Management reforms on the performance of Czech museums. We examine the impact of administrative decentralization, management autonomy, and performance management tools, using a survey, two-stage data envelopment analysis, and focus groups. Using these methods, we have been able to confirm the significative impact of administrative decentralization and substantial autonomy. However, the statistical significance of financial autonomy was not confirmed, neither was the way in which objectives are set, nor the use of quality management methods to achieve performance.

1. Introduction

New Public Management (Hood 1991) along with the connection to ideas of Public Management Reform (Pollitt/Bouckaert 2011), Reinventing Government (Osborne/Gaebler 1992), or Managerial and Performance ideology (Moynihan 2004, 2005; Kettl/Kelman 2007; Moynihan/Pandey 2010), is one of most discussed topics in administrative and managerial sciences.

The problems and results of these reforms seem to be mapped on the level of central and local governments mainly in western countries (Van Dooren/Bouckaert/Halligan 2015; Pollitt/Bouckaert 2017), while in central and eastern Europe there is still a lively discussion about the impact of reform efforts in the spirit of the New Public Management (Nemec/Špaček/Suwaj/Modrzejewski 2012; Dan/

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Pollitt 2015; Drechsler/Randma-Liiv 2016; Plaček/Špaček/Ochrana/Křápek/
Dvořáková 2019).

Our paper deals with an empirical analysis of the influence on the cultural heritage sector of some New Public Management (NPM) reform components. The protection of cultural heritage is a typical example of a public good just like health, or education. However, it receives less analytical attention than other sectors within the public sector (Skinner/Ekelund/Jackson 2009) which might be due to the distinctiveness of cultural heritage as an intangible good, resulting from its symbolic and intangible significance (ibid.). A museum is perceived as a non-profit organization where social objectives prevail (education, conservation, custody, etc.) (Camarero/Garrido/Vicente 2011). This is also due to the fact that selected aspects of cultural heritage economics are deficient in the relevant literature (Skinner et al. 2009; Herrero-Prieto 2013; Herguner 2015).

Inspiration for our study comes from the Pérez-López et al. (2015) paper which empirically tested the influence of public management delivery forms on efficiency in Spanish municipalities. They focused on specific New Public Management delivery forms like the form of service delivery, managerial autonomy, and specific managerial instruments. In our study, we work with their theoretical framework and adapt it to the field of cultural management.

Our main aim is to test the influence of selected New Public Management reform instruments on the efficiency of Czech museums. We focus on the mode of governance, managerial autonomy, and utilization of performance management tools.

Our research enriches the theory of public management as it analyzes the impact of New Public Management instruments in the very specific field of cultural heritage. We are not aware of any other such complex study as the present one where we use very unique data recorded through a questionnaire and data mining. We are also aware of the problem connected with the utilization of quantitative methods, hence we use focus group techniques to analyze in depth the obtained results of the econometric analysis.

2. Theoretical framework

NPM could be deemed as a hybrid synthesis of several theories such as Public Choice, Managerialism, Principal-Agent Theory, Neoliberalism, and Transaction cost theory, which was implemented in the public sector in order to achieve better efficiency and better public service delivery (Pérez-López et al. 2015). The main instruments of the New Public Management ideology are privatization, contracting out, decentralization and managerial tools implementation in the public sector (ibid.). Due to mixed results of the reform, changes in the economic situation, and rise of new administrative sciences theories, parts of this tools

were reconsidered while others are still important instruments for public sector management (Pérez-López et al. 2015; Camarero/Garrido/Vicente 2019).

The museum industry has not avoided these trends. The increasing number of museums and the importance of the leisure industry is forcing museum entities not only to compete with each other but also to compete with alternatives from other industries such as libraries, etc. (Vicente/Camarero/Garrido 2012). "This situation has led many museums to focus more on visitor needs and on developing new services and products, and has even led some to accept the privatization of certain services" (ibid.). Cost cutting policies led to the necessity of the diversification of museum funding, the adoption of competitive strategies, or the look for efficient resource management and also for an optimal governance structure. Museums started to have an obligation to actively engage everybody and to widen the scope of the matter considered worthy of their attention (ibid.).

Hence museum management came to attract the attention of many scholars in the field of museum and management research (Camarrero/Garrido/Vicente 2019). According to Vicente et al. (2012), we can observe three kinds of cultural policy governance models: the continental European model, the British model, and the American model. Each model has some particularities, although some common issues which are characteristic for all systems can be identified. These include the different ways museum service should be delivered (decentralization and privatization), managerial autonomy, and how to increase the efficiency of museums expenses (Vicente et al. 2012; Camarrero et al. 2019).

In the case of the different ways museum service should be delivered, we must start with the classical theory of decentralization as in Oats' theorem, where if responsibility for providing public goods and services is transferred, the conditions for their efficient provision are created. One of the first applications of this theory in the museum sector was Darnell et al. (1998), which states that museums have a great advantage in knowing local demand. However, evidence from different countries does not confirm this assumption (e.g. Herrero-Prieto 2013). Herguner (2015) also highlights the risks of implementing NPM tools such as decentralization, or devolution, that result in professional corrosion or shortcomings in the ability of public museums to fulfill their traditional mission. The findings of that study show that the lack of museums' budgetary discretion is seen as a major problem within the sector. Additionally, museum experts would like to focus on their primary field of expertise, while other personnel should be responsible for social issues (ibid.). Shoup et al. (2014) analyzes the impact of outsourcing the museums' secondary activities to achieve economies of scale. Barrio and Herrero (2014) utilizes an institutional approach to management distinguishing between museums governed by regional authorities and other founders, and other variables which distinguish between museums located in provincial capitals and those located in rural areas. Museums located in the capi-

tal area were more effective than rural museums. Camarrero et al. (2019) insisted that public museums directly run by government entities remain too bureaucratic and lack incentives.

Regarding the problem of managerial autonomy, we must be aware that managerial autonomy has several aspects, from the freedom of setting objectives and strategies to the scope and intensity of the supervisor control. The experience of implementing this tool is summarized by Pérez-López et al. (2015), who states that in addition to the expected benefits such as greater flexibility, innovative solutions discovery, specialization, reduction of service delivery cost, and ultimately, greater efficiency of service provision, there are also risks such as the loss of control and accountability, impaired financial performance, and impaired coordination. There are also broadly-oriented publications in the field of culture (e.g. Krug/Weinberg 2004; Chun/Rainey 2005; Jung 2014a, 2014b; Anderson/Stritch 2015; Pollanen/Abdel-Maksoud/Elbana/Mahama 2017). Guillon (2017) examines the adherence to the objectives of employees in the cultural industry, where, according to his findings, control variables, such as age and salary are not significant for the cultural sector. A concept such as goal setting can improve organization efficiency by eliminating the information asymmetry that occurs in the principal-agent relationship. Overman (2020) describes the importance of accountability arrangements for ambiguous goals which are characteristic for museums. He stated that the market mechanism works in case a supply and demand for accountability information and the problem of their mismatch exist. He also argues that there is a difference between financial accountability and cultural accountability. Museum directors anticipate more accountability about cultural value than about financial matters.

From the point of view of this theory in museums, Pei-Hsuan and Chin-Tsai (2016) endeavors to identify the critical factors that influence Taiwan's national museums business performance based on its curators' views. The study identified four core criteria -benefits, opportunities, costs, and risks- as key influences in the national museums' business performance. Camarero et al. (2011) proved the impact of museums' organizational size on innovations in business management, technology, and value creation as well as on economic performance, market performance (audience satisfaction) and social performance (achieving a cultural mission).

Bertacchini et al. (2018), based on Italian data, shows that public museums with financial autonomy and outsourced museums outperform both public museums run as sub-units of cultural departments and private museums.

The last issue relates to the impact of using modern quality and performance management tools linked to reforms in the NPM such as Balanced Scorecard, ISO, Benchmarking, Management by objectives and others (Pollitt/Bouckaert 2011; Osborne 2017). Chenhall (2003) perceives these tools as part of the man-

agement control system and examines them in the context of different theories but also places great emphasis on context and environment. He says there is a need to focus on organizational and social outcomes. The first models of performance management were applied in the field of cultural institutions in the works of Gilhespy (1999, 2001) and Krug and Wainberg (2004) where proposals were derived from the general concept of efficiency of non-profit organizations (NPOs). The models are based mostly on Key Performance Indicators and Balanced Scorecard trying to consider the specificities of individual institutions. The performance management model focused on performance arts provided by Turbide and Laurin (2009) states that even though managers realize that artistic excellence is the most important success factor of NPOs, their performance measurement systems put as much emphasis on financial performance indicators as on non-financial ones.

3. Institutional setting and hypothesis

Czech cultural policy was significantly inspired by the Dutch model (Vojtíšková/ Lorencová 2016). The first two real documents in the field of public policy on culture originated in 1999 and 2001 with one of these being compiled by a Social Democrat government. This policy was primarily focused on the protection of cultural heritage and contained two very important points:

- continuity of cultural heritage protection, and
- implementation of new instruments of cultural and economic decentralization, independent decision-making (peer review principle), free access to information and the definition of public cultural service legislation (Vojtíšková/ Lorencová 2016).

Implementation of the principles of decentralization in the area of cultural heritage needs to be linked to the reform of the public administration. As in 2000 there were 14 regions in the Czech Republic, which led to the formation of three levels of government: central, regional, and municipal.

There are 488 museums in the Czech Republic, 79 % being publicly founded by the state (32 museums), the regions (92 museums) or the municipalities (261 museums), whereas the rest (99 museums) are private. Most public museums operate as contributory organizations, meaning that they receive financial contributions from their founder. The total contribution of the public founders to the museum's activities is constant around 80 % of their total income (see National Information and Advisory Center for Culture, abbreviated as NIPOS 2016). Hence only one fifth of all public museums income is covered by their own resources. In the Czech Republic, as well as in other countries, resistance to performance measurement is widespread. Current activities in this area are merely at the level of benchmarking pilot studies (Pùček/Plaček/Ochrana/Vích 2015).

In the following, hypotheses will be conceptualized by which the influence of selected factors related to the governance and New Public Management on the efficiency of museums in the Czech Republic will be tested. Using theoretical arguments, the impact of institutional factors on efficiency can be predicted. However, empirical results are largely influenced by national, regional, and local conditions.

The influence of administrative decentralization on the efficiency of institutions in the Czech Republic will be dealt with first. The Czech Republic is deemed as one of the most fragmented countries. Plaček et al. (2020) describes several factors, derived from theory, and empirically prove they are associated with public service delivery efficiency. Information asymmetry, rational absence and ignorance, bureaucratic behavior, yardstick competition, governmental grants and transfer, administrative capacity, environmental and institutional settings are important factors for accountability in the principal-agent arrangement connected with decentralization. According to their results the decentralization should not be associated with efficiency in any case. For example, in small municipalities efficiency deteriorates due to economies of scale and small administrative capacity.

The authors perceive administrative decentralization as the ability of individual governments to establish their own institutions for the purpose of implementing public policy in the field of cultural heritage. In this case, three levels of administrative decentralization by the central authorities have been distinguished: state, regions, and municipalities.

In the Czech Republic, there is very limited empirical research, e.g. Plaček et al. (2017, 2018), and it is known that there are differences in efficiency between the museums set up by the state, the regions, and the municipalities. The authors claim that this is due to differences in quality and the efforts of local museums to minimize costs. Local museums achieve efficiency with smaller exhibition area sizes and job sharing.

Based on the above assumptions, the following hypothesis has been determined:

Hypothesis 1:   Administrative decentralization has a statistically significant influence on the performance of the institution.

Another examined factor is the influence of management autonomy on the level of achieved efficiency. Based on Šulc (2014), management autonomy in two areas is examined. The first area is economic administration, which focuses mainly on ensuring the day-to-day running of the institution. The second area is management autonomy in collections, the presentation of the museum, and the artistic intent. It can be assumed that more detailed and specific targets have a positive impact on performance. In the Czech Republic, these records are very

scarce. Therefore, the hypotheses are based on studies describing the institutional environment in the Czech Republic at the national level (Veselý/Nekola/Hejzlarová 2016) and the sub-national level (Nekola/Kohoutek 2016), which describe the weak institutional environment and insufficient capacity for policy implementation. Ochrana et al. (2016) talks about frozen public administration reform. For this reason, this was approached rather pessimistically. Hence, the following hypothesis has been established:

Hypothesis 2: *Management autonomy has no statistically significant impact on the performance of the institution.*

Ochrana et al. (2016) describes the problems of the Czech Republic in the area of strategic management and goal setting. Its authors see problems mainly in insufficient capacity, rigidity and in the dominance of long-term planning. As the museum sector in the Czech Republic is highly decentralized, there are significant differences in the ways objectives are set among individual founders. Plaček et al. (2017) describes the reality of strategic management in museums in the Czech Republic and state that modern strategic approaches are not widespread in museums. Therefore, a negatively defined hypothesis needs to be considered.

Hypothesis 3: *The way in which the institution's goals are set by the overseer has no statistically significant impact on the performance of the institution.*

The last factor relates to the impact of using modern quality and performance management tools such as Balanced Scorecard, ISO, Benchmarking, Management by objectives and others. In the Czech Republic, there are several studies that examine the effects of the use of performance management tools in the public sector, a large part of which are relatively skeptical and warn that their potential has not been fully exploited (e.g. Nemec et al. 2012; Placek et al. 2017). Plaček et al., (2019) and Plaček et al. (2020) empirically investigate the association between excellence in quality management methods and cost efficiency use from municipalities. According to their results the excellent municipalities did not outperform the control group of municipalities which did not achieve the excellence in quality management methods. The authors explained their results through only formal implementation of quality management methods from the side of municipalities and limited accountability in public sector.

In museums, empirical evidence is clearly more limited. Just two studies dealing with this topic were identified. Půček et al. (2015) maps the current experience with benchmarking in the area of Czech Museums. Based on their findings, the use of these tools is in the initial phase and lags behind other sectors, for example, by municipalities. Plaček et al. (2017) deals with the use of strategic man-

agement, Balanced Scorecard, and Management by objectives in the museum environment. Using case studies on specific museums, the paper shows that these tools can achieve results. However, the authors also note that the use of these tools is only in the embryonic phase and is not widespread among museums. Hence, the last hypothesis is the following.

Hypothesis 4:   The use of performance tools has no statistically significant impact on the performance of the institution.

4. Data and methodology

The previous hypotheses will be verified using a regression model where the dependent variable is museum performance detected by data envelopment analysis (DEA), and the independent variables are dummy variables describing the level of decentralization, the level of managerial autonomy, the method of goal setting, the influence of the founder, and the use of performance tools. In order to verify the established hypotheses, we need to add to our regression model control variables expressing the socio-economic characteristics of the external environment in which the museum operates.

Regression analysis is able to identify correlation, not causality. Moreover, we compiled the data from several sources and, thus, there might be a risk of losing explanatory power. Hence, we decided to combine a quantitative approach with a qualitative one. Accordingly, we used focus groups where museums managers were approached in order to obtain a deeper explanation of the econometric analysis results.

In our analysis, we proceeded in several steps. In the first step, we performed an evaluation of the performance of museums founded by the public sector in the Czech Republic using the DEA method. Subsequently, we conducted a survey of museum management. After that, we linked the results of the museum's performance with the results of the questionnaire before using datamining methods to find information about the location of the museum. Based on the questionnaire variables and the museum location information, we created a regression model with which we endeavored to identify statistically significant performance determinants and verify the hypotheses set out in the objectives.

The last step was to verify the model results using focus groups with museum managers. This approach will allow for more in depth explanation of the results of the econometric model.

4.1 Analysis of museum performance using the DEA method

The main used method was data envelopment analysis. This method is suitable to evaluate the efficiency, performance, or productivity of homogeneous produc-

tion units, i.e., units that produce identical or equivalent effects, which will be labeled as their outputs. Efficiency can be defined as the ratio between inputs and outputs (Storto 2016). Da Cruz and Marques (2014) notes efficiency as a ratio of outputs and inputs fulfills the need to have a composite indicator that represents the overall performance of the organization, and the usefulness of comparisons (benchmarking). The unit with a technical efficiency coefficient equal to one is effective, while a coefficient smaller than one points out to an inefficient unit, and determines the amount of input reduction needed to ensure unit efficiency. The area of museums has also been dealt with (Barrio/Herrero/Sanz 2009; Taheri/Ansari 2013; Herrero-Prieto 2013; Barrio/Herrero 2014).

In our input focused DEA constant returns of scale (CCR) model, we take the inputs to be the number of employees as well as the contributions of the founder, which we express as the difference between the total costs and the museum's own revenues. Outputs include the museum's number of visitors, number of exhibitions, and number of expositions. One of the important factors for the selection of input and output indicators was the ability to describe the complexity of the museum's work. This set of indicators was objectivized in consultation with the Czech National Museums of Agriculture management.

For the Czech Republic, data was provided by NIPOS (National Information and Counseling Center for Culture), which is a contributory organization of the Ministry of Culture dealing with the collection of statistical information on culture. Unfortunately, the organization refused to provide information on the financial performance of individual institutions, so we had to obtain this information using datamining techniques from the official portal of the Czech Ministry of Finance (http://monitor.statnipokladna.cz).

There are a total of 389 museums in the Czech Republic established by the public sector. However, many of those museums are not legal entities in themselves and are part of a municipal office or a contributory organization that has the competence to develop culture in a municipality. We managed to obtain the relative efficiency values for all 187 museums that are independent legal entities. Of these, 22 museums were established by the state, 88 by the regions, and 77 by municipalities. By choosing museums that are independent legal entities, we have partially eliminated the large heterogeneity of the sample. Finally, for all the organizations we analyzed, we calculated the average relative effectiveness for the period 2010–2015.

4.2 Questionnaire survey

The survey was directed at museum managers from museums established by the public sector having their own legal status as an entity, i.e. the museum is not part of a municipal authority or a contributory organization having competence to provide cultural services in the municipality. All managers of the 187 previ-

ously mentioned museums were approached. The questionnaire was in electronic format and consisted of five key questions to ensure the highest return of the questionnaire (see Table 1).

Table 1. Structure of the questionnaire

Test hypothesis	The wording of the question	Possible answer
Hypothesis 1: Administrative decentralization has a statistically significant effect on the performance of the institution.	Who is the founder of your institution?	State / region / city
Hypothesis 2: The autonomy of management has a positive impact on the performance of the institution.	Management has enough space and motivation for effective economic management.	Scale from 1 (agree) to 5 (disagree)
Hypothesis 2: The autonomy of management has a positive impact on the performance of the institution.	The management of our organization has ample room for substantive management (for example, collection activities, museum presentations, exhibitions, etc.)	Scale from 1 (agree) to 5 (disagree)
Hypothesis 3: How the institution's goals are set by the overseers has not a statistically significant impact on the performance of the institution.	How are your goals set up for your organization?	Objectives are set precisely and have measurable indicators / targets resulting from strategic documents / targets are set in general / objectives are not set
Hypothesis 4: The use of performance tools has not a statistically significant impact on the performance of the institution.	Our organization uses modern performance management tools such as benchmarking, balanced scorecard, key performance indicators.	Yes/no

Source: Authors

4.3 Regression model

In order to verify the established hypotheses, we connected the questionnaire responses with the results of the average performance of institutions analysis via the DEA method. The complete list of the variables to be used in the regression analysis can be found in Table 2.

The total return rate of the questionnaire was 30.48 %. According to Wooldridge (1999), truncated and censured data can be divided into four groups. Two of these groups indicate the restriction of samples based on a previous decision of the respondent. The questionnaire was sent to all museums without exception, and therefore the last two options remain. That is to say, either the sample is incomplete nor sufficiently random to use OLS, either the reason why the museum

manager did not respond is a significant cause of the resulting efficiency. But from the information we have about the museums, even from the answers we have received containing all possible combinations of responses, it cannot be assumed that the respondents avoided certain answers simply by not responding. Hence we have to assume that the obtained sample is random and therefore distorted, and the use of OLS is therefore adequate (Wooldridge 1999). To solve the problem of a small sample, the Simar and Wilson double bootstrap approach was utilized. Bootstrap is one easy way to analyze the sensitivity of efficiency scores relative to the sampling variations of the estimated frontier. The main point in order to validate the bootstrap is to define a reasonable data-generating process in this complex framework and to propose a reasonable estimator (Simar/Wilson 1998). The basic bootstrapping parameters were: L1=500, L2=5,000 and alfa = 0.05.

R package rDEA (Simm/Besstremyannaya/Simm 2016) provides implementation of the robust DEA method with environmental variables by the Simar and Wilson algorithm. The function does not directly provide an estimation of the significance for the environmental variables, whose parameters are estimated in the second bootstrap loop. However, statistical significance is determined using confidence intervals.

As part of our analysis, we worked out the general model, which is outlined in Section 5.

Table 2. Description of variables for regression model

Variable name	Type	Description	Mean	St. Dev.	Utilized in Literature
Performance	Dependent variable	The 5-year average of relative efficiency calculated by the DEA method	0.3622215	0.19287122	Taheri/Ansari 2013; Herrero-Prieto 2013; Barrio / Herrero 2014; Srakar et al. 2017
Founder	Nominal explanatory variable (test hypotheses No.1)	Answers to survey question 1, values 0 – 2	NA	NA	Herrero-Prieto 2013; Plaček, et al. 2017; Bertachini et al. 2018
Economic autonomy	Nominal explanatory variable (test hypotheses No.2)	Answers to survey question 2, values 1–5	2.3243243	1.15600015	Herrero-Prieto 2013; Bertachini et al. 2018

Variable name	Type	Description	Mean	St. Dev.	Utilized in Literature
Material autonomy	Nominal explanatory variable (test hypotheses No.2)	Answers to survey question 3, values 1–5	1.7297297	0.99019214	Herrero-Prieto 2013
Goal setting	Nominal explanatory variable (test hypotheses No.3)	Answers to survey question 4, dummy variable 0 or 1	NA	NA	Herrero-Prieto 2013
Use of performance tools	Nominal explanatory variable (test hypotheses No.4)	Answers to survey question 5, dummy variable 0 or 1	NA	NA	Narbón-Perpiñá/ DeVitte 2018a, 2018b; Poll 2018; Basso/Casarin/ Funari 2018
Proportion of university graduates in the population	Control Variable	Share of university educated people within the municipality population	0.1308140	0.04095169	Plaček et al. 2017; Srakar et al. 2017; Bertachini et al. 2018
Density of inhabitants	Control Variable	Population density in the municipality.	7.6901130	6.24374743	Herrero-Prieto 2013; Bertacchini et al. 2018
Average age	Control Variable	Average age of the municipality inhabitants	42.6666347	0.95422345	Da Cruz/ Marques 2014; Storto 2016
Share (per capita) of households with internet	Control Variable	Attitude of the public towards modern technologies	0.7165544	0.02706674	Da Cruz/ Marques 2014; Storto 2016
Share (per capita in municipality) of unemployed in the region	Control Variable	Share of legitimate job seekers aged 15–64 from all inhabitants of the same age in the municipality	3.1729004	0.81840813	Plaček et al. 2017
GDP per capita	Control Variable	Economic level of the region	0.3925436	0.11776872	Narbón-Perpiñá /DeVitte, 2018a, 2018b

Variable name	Type	Description	Mean	St. Dev.	Utilized in Literature
Number (per capita in municipality) of economic entities	Control Variable	Number, per capita, of economic entities in the municipality. This indicator describes the economic activity in the municipality	0.2568962	0.05980718	Plaček et al. 2017; Narbón-Perpiñá/ De-Vitte 2018a, 2018b
Number of libraries per capita	Control Variable	Number, per capita, of libraries in the municipality.	0.0304529	0.0317081	Plaček et al. 2017

Source: Authors

According to the reliability test results (see Table 3), the values of all Lambda4 (0.9), Guttman Lambda6, Average split, and Cronbach's Alpha internal reliability coefficients (0.72) are acceptable (Tavakol/Dennick 2011), even though Revelle's Beta is a little low. Hence the internal consistency of the results is guaranteed.

Table 3. Reliability test results

Maximum split half reliability (lambda 4)	0.9
Guttman lambda 6	0.87
Average split half reliability	0.72
Cronbach's alpha	0.72
Minimum split half reliability (beta)	0.27

Source: Authors

The resulting model was created with the backward stepwise method. That is, from the model, where all the nominal and control variables were included, the control variables were sequentially removed in order to meet the classical assumptions.

4.4 Focus group

The focus group method allows for in depth analysis of the econometric model results. The inquiries for the focus group were tested on a group of museum managers set up by the central government. The managers were selected by the snowball sampling method and thus, the contacted respondents provided contacts to other potential respondents who would be willing to participate.

The focus group is formed by a representation of museum managers at all levels of the founder. Table 4 provides basic information about the participants.

Table 4. Basic information about the focus group participants

Respondent code	Highest educational level	Educational field	Years of practice in a leading position in a museum
M1	Master's degree	History	15
M2	Ph. D	History, scientific, technical	12
M3	Ph.D	Museology, history	9
M4	Master's	History	18
M5	Master's	Museology, history	13
M6	Ph. D	History, philology	8.5
M7	Ph.D	Economy	9
M8	Ph.D	Museology, history	16
M9	Master's	Library science	1
M10	Ph.D	Economics	5

Source: Authors

Participants were asked to comment on the results of the model with respect to the set out hypotheses and to identify causes based on their practice in museums. In the results section, the content analysis of participants' answers within the focus group are presented. Illustrative answers are given in the form of citations of participants' direct speech.

5. Results and discussion

5.1 Econometric analysis

Table 5 shows the final results of the regression model that serves to test the hypotheses after a backward stepwise procedure had been run to find the significant explanatory variables. P-value is 0.0002869 and R-squared is 0.514 ensuring an acceptable goodness of fit.

Table 5. Results of the backward stepwise econometric model

Variable	Estimate	St.Dv.	Error	Pr(>|t|)
Intercept	-0.78353	0.70629	-1.109	0.2758
Founder (H1)	-0.08909	0.04391	-2.029	0.0511
Material autonomy (H2)	0.06985	0.02604	2.683	0.0116
Share of households with internet per capita	1.73028	1.02870	1.682	0.1026
The proportion of university graduates in the population	-1.46415	0.74491	-1.966	0.0584

Variable	Estimate	St.Dv.	Error	Pr(>|t|)
Number of libraries per capita	1.76243	0.85466	2.062	0.0477

Source: Authors

Hypothesis 1 was confirmed. Decentralization is associated with higher efficiency. Municipal and regional museums outperforms the big museum managed by central government.

Hypothesis 2 cannot be rejected. It deals with the impact of financial and material autonomy on efficiency. According to the results of the econometric model, financial autonomy has no statistically significant impact on the museum's performance (p-value is smaller than the significance level 0,05), while higher material autonomy is associated with higher performance.

Hypothesis 3, where it was assumed that there would not be a statistical significance involving the setting of museum goals, was confirmed as the backward stepwise method eliminated the associated goal setting variable from the final model.

Hypothesis 4, where it was assumed that there would be statistical insignificance regarding the impact of modern management tools on efficiency, was also confirmed as, similarly to hypothesis 3, the backward stepwise method also eliminated the associated use of performance tools variable from the final model confirming the absence of statistical significance.

Some control variables have a statistically significant influence, as well. The share of households with Internet access and the number of libraries is positively associated with efficiency. On the other hand, the proportion of university educated population is associated with lower performance. It has to be noted that all three control variables have a higher influence (higher coefficient) on the variation of the dependent variable, the performance, than both variables Founder and Economic autonomy. However, this circumstance does not hinder the fact that both variables Founder and Economic autonomy have a statistically significative influence too, confirming hypotheses H1 and H2.

5.2. Focus groups

In this subsection we present the results of focus groups and explanatory comments provided by the museum managers.

Hypothesis no. 1:

The majority of the approached managers agreed that these results correspond to their experience. The main reasons were that small local museums have more enthusiastic employees and better communication (M1, M2, M6, M7, M10), and

are able to more closely communicate with the founder (M1, M5, M10). Fiscal stress was also mentioned in the sense that institutions with smaller budgets are forced to work more effectively (M10, M9). There were also several contrary opinions which were based on the argument of the different quality level in service delivery and the higher requirement for preparing expositions and other events in museums managed by the government (M3, M4, M8).

Hypothesis no. 2:

All members of the focus group (M1-M10) agreed that substantial management autonomy is important to increase the efficiency level. This is mainly due to the better motivation of management (M3, M4, M5, M6, M8, M9, M10) and a bigger space for creative solutions and initiatives (M1, M2, M7). Several respondents also pointed out that the final result is also associated with the quality and competences of the appointed management (M6, M7).

Regarding financial autonomy, the econometric model showed contrary results which were found quite surprising by the majority of the focus group members (M2, M3, M4, M6, M8, M10). Despite these facts, some participants were able to name possible reasons. Concretely, the regulatory environment was identified as the museum sector financial management is regulated by general legislation (Financial Control Act, and Public Procurement Act) (M7). The problem may also lay in grant financing as it is known that higher proportion lump sum grant financing leads to decreased efficiency (M1). The low motivation for museum managers to make a profit was also given as a possible reason (M5).

Hypothesis no. 3:

The results of the econometric analysis were opposite to the focus group members' opinions. They deemed the way of establishing the goals as crucial (M1-M10), but an important proportion of the respondents pointed out that, in the Czech Republic, the way of management is still at a premature stage (M3, M4, M5, M6).

Hypothesis no. 4:

The analysis of the focus group members confirmed our results. The participants were quite pessimistic about the utilization of performance management tools. They found the main barriers were the conflict between the museums' mission and values (M1, M2, M6, M8, M9) as well as a previous unsuccessful pilot project involving benchmarking among museums and galleries which did not deliver the expected results (M4, M5, M7). Some respondents also believe that many museums managers do not possess the appropriate technical skills to fully utilize the potential of this instruments (M4, M10).

6. Discussion and concluding remarks

The conclusions of our article are, at first glance, somewhat surprising, as they go against theoretical general assumptions regarding the use of New Public Management instruments, like performance management (Henman 2016; Pollanen et al. 2017; Tomazevic/Tekavcic/Peljhan 2017) autonomy of management (Nielsen 2014; Jung 2014; Favoreu/Carassus/Gardey/Maurel 2015; Grossi/Hansen/Johanson/Vakkuri/Moon 2016; Wynen/Verhoest 2016) and conversely, the effects of decentralization proving its success (Wynen/Verhoest/Rubecksen 2014). Hammerschmid et al. (2019) stated in their study dealing with New Public Management reforms and their effects on European countries that, according to official perception, this reform lead to performance improvement. Authors differ between several performance dimension like cost and efficiency, service quality, policy coherence and coordination, and equal access to services, and argue that particular reform components (e.g. autonomy or agentification) could have different impact in particular performance dimensions. Lapuente and Van De Walle (2020) argues success (or failure) depends on the administrative, political and policy context where those reforms take place.

Our results could be explained by mismatching approaches. Brenton and Bouckaert (2020) stated that New Public Management can privilege economic language, impact and measurement. They identified at least eight functions of current museums and about 20 frameworks for defining cultural indicators and six main interconnected outcomes. Overman (2020) puts the stress more on the intrinsic motivation of museums and the museum management for cultural values than on the economic performance. This is more in line with the concept of Public value which emerged as a corrective reaction to NPM (Brenton/Bouckaert 2020). The Public value concept is based on the following set of values: equity, efficiency, fairness, justice, prudence, transparency, social cohesion, user orientation, political accountability, and regime stability (Thompson/Rizova 2015), where the effectiveness is only part of the Public value. Rutgers (2015) defines public value as to be as good as it gets. This maybe a fuzzy definition of public value, but it could help to translate it to the cultural value where it is very difficult to produce clear evidence and the definition of culture is often contested (Brenton/Bouckaert, 2020). This assumptions was also confirmed by particular claims resulting from the focus group.

Additionally, more exists against current research in the field of museums, particularly on the influence of organizational forms (Shoup et al. 2014; Bertacchini et al. 2018), the autonomy of management (Mio/Fasan 2015; Bertacchini et al. 2018), or the way in which to set goals (Pei-Hsuan/Chin-Tsai 2016). Furthermore, taking into account the specifics of the sector we are exploring, these results are logically justifiable. Herrero-Prieto (2013), in his research literature from a multi-country environment, claims that the concept of measuring and

achieving efficiency comes to the cultural heritage sector after a delay of several years.

Another interesting fact is the statistically significant influence of the socio-economic variables, confirmed by Herrero-Prieto (2013) and Barrio and Herrero (2014). The significant impact of socio-economic variables on efficiency using the examples from other industries has been confirmed by Seifert and Nieswand (2013).

Our research is not without certain limitations, which stem mainly from the great heterogeneity of the examined institutions and their different missions. The actual definition of museum performance varies in many cases (e.g. Skinner et al. 2009; Camarero et al. 2011). Additionally, there was some reluctance to respond to the survey questions as well as very negative reactions from the respondents to any mention of performance measurement.

Based on the results of the model, we were able to confirm the statistically significant impact of administrative decentralization, the results of testing management autonomy, whereas the way of goals setting, financial management, and the use of modern methods of performance management were to the contrary. We verified the results using a focus group consisting of museum managers, whose comments enabled us to analyze more in depth the problem.

Our findings open a new dimension in museum management research which has far-reaching importance. Existing studies analyze the links between the factors related to the institutional environment and the real performance of public organizations almost exclusively for the conditions of the developed world. Our findings enrich the general knowledge by investigating the specific situations and conditions of less developed (post-transitional) countries, where some mechanisms may work differently than they do in developed countries.

Our research also opens up other questions that provide ideas for further research, such as how to define the concept of cultural heritage performance so as to achieve a balance between the museum's economic and social functions, to identify the optimal levels of autonomy and motivation of management and to identify the best means of communication with the founder, among others. Last but not least, the analysis of the impacts of decentralization as well as outsourcing and devolution on the performance of these institutions should inspire future research.

Funding

References

Anderson, D.M./Stritch, J.M. (2015): Goal Clarity, Task Significance, and Performance: Evidence from Laboratory Experiment, in: Journal of Public Administration Research and Theory, 6, 1–24.

Basso, A./Casarin, F./Funari, S. (2018): How well is the museum performing? A joint use of DEA and BSC to measure the performance of museums, in: Omega, 81, 67–84.

Barrio, J.M.,/Herrero, C.L. (2014): Evaluating the efficiency of museums using multiple outputs evidence from a regional system of museums in Spain, in: International Journal of Cultural Policy, 20, 2, 221–238.

Barrio, J.M./Herrero, C.L./Sanz, Á.J. (2009): Measuring the efficiency of heritage institutions: A case study of a regional system of museums in Spain, in: Journal of Cultural Heritage, 10, 258–268.

Bertacchini, E.E./Dalle Nogare, C./Scuderi, R. (2018): Ownership, organization structure and public service provision: the case of museums, in: Journal of Cultural Economics, 42, 4, 619–643.

Brenton, S./Bouckaert, G. (2020): How did museums escape New Public Management?: The special case of cultural value, in: Journal of Public Administration Research and Theory. Forthcoming.

Camarero, C./Garrido, M.J/Vicente, E. (2011): How Cultural Organizations' Size and Funding Influence Innovation and Performance: The Case of Museums, in: Journal of Cultural Economics, 35, 247–266.

Camarero, C./Garrido, M.J./Vicente, E. (2019): Relationship marketing in museums: influence of managers and mode of governance, in: Public Management Review, 21,10, 1369–1396

Chenhall, R.H. (2003): Management control systems design within its organizational context: findings from contingency-based research and directions for the future, in: Accounting, Organizations and Society, 28, 127–168.

Chun, Y.H./Rainey, H.G. (2005): Goal Ambiguity and Organizational in U.S. Federal Agencies, in: Journal of Public Administration Research and Theory, 15, 529–557.

Da Cruz, N./Marques, R. (2014): Revisiting the determinants of local government performance, in: Omega, 44, 91–103.

Dan, S./Pollitt, Ch. (2015): NPM Can Work: an optimistic review of the impact of new public management reforms in Central and Eastern Europe. Public Management Review, 15, 9,1305–1332.

Darnell, A./Johnson, P./Thomas, B. (1998): The demand for local authority museums: Management issues and hard evidence, in: Local government studies, 24, 4, 77–94.

Drechsler, W./Randma-Liiv, T. (2016): In some Central and Eastern European countries, some NPM tools may sometimes works: A reply to Dan and Pollitt´s can work, in: Public management review, 18, 10, 1559–1565.

Favoreu, C./Carassus, D./Gardey, D./Maurel, C. (2015): Performance management in the local public sector in France: an administrative rather than a political model, in: International review of administrative sciences, 81, 4, 672–693.

Grossi, G./Hansen, M.B./Johanson, J.E./Vakkuri, J./Moon, M.J. (2016): Introduction: Comparative Performance Management and Accountability in the Age of Austerity, in: Public performance & management review, 39, 3, 499–505.

Gilhespy, I. (1999): Measuring the Performance of Cultural Organizations: A Model, in: International Journal of Arts Management, 2, 1, 38−52.

Gilhespy, I. (2001): The Evaluation of Social Objectives in Cultural Organizations, in: International Journal of Arts Management, 4, 1, 48−57.

Guillon, O. (2017): Do Employees in the Cultural Sector Adhere More Strongly to Their Organization's Goals Than Employees in Other Sectors?, in: International Journal of Arts Management, 19, 2, 4–13.

Hammerschmid, G./Van de Walle, S./Andrews, R./Mostafa, A.M.S. (2019): New Public Management reforms in Europe and their effects: findings from a 20-country top executive survey, in: International Review of Administrative Sciences, 85, 3, 399–418.

Henman, P. (2016): Performing the state: the socio-political dimensions of performance measurement in policy and public services, in: Policy studies, 37, 6, 499–507.

Herrero-Prieto, L.C. (2013): Is museum performance affected institution type? Measuring cultural institution efficiency through non-parametric techniques. IIIS Discussion Paper No. 425. Institute for International Integration Studies, Trinity College Dublin.

Herguner, B. (2015): Public value as a framework for reforming publicly funded museums, in International journal of public sector management, 28, 6, 461–474.

Hood, Ch. (1991): A public management for all seasons?, in: Public Administration, 69, 1, 3–19.

Jung, Ch.S. (2014a): Extending the Theory of Goal Ambiguity to Programs: Examining the Relationship between Goal Ambiguity and Performance, in Public Administration Review, 74, 2, 205–219.

Jung, Ch.S. (2014b): Why Are Goals Important in the Public Sector? Exploring the Benefits of Goal Clarity for Reducing Turnover Intention, in Journal of Public Administration Research and Theory, 24, 1, 209–234.

Kettl, D.F./Kelman, S. (2007): Reflections on 21st century government management. Washington, DC: IBM Center for the Business of Government.

Krug, K./Weinberg, C.B. (2004): Mission, Money and Merit: Strategic Decision Making by Nonprofit Managers, in Nonprofit Management and Leadership, 14, 3, 325–342.

Lapuente, V./Van de Walle, S. (2020): The effects of new public management on the quality of public services, in Governance, in press. https://doi.org/10.1111/gove.12502.

Moynihan, D. (2004): Why and how do state governments adopt and implement "managing for results" reforms?, in: Journal of Public Administration Research and Theory, 15, 2, 219–243.

Moynihan, D. (2005): What do we talk about when we talk about performance? Dialogue theory about performance budgeting, in: Journal of Public Administration Research and Theory, 16, 2, 151–168.

Moynihan, D./Padley, S.K. (2010): The big question for performance management: why managers use performance information? Journal of Public Administration Research and Theory, 20, 4, 849–866.

Mio, Ch./Fasan, M. (2015): The Impact of Independent Directors on Organizational Effectiveness in Monetary and In-Kind Stakeholder Dialogue Museums, in: Journal of arts management law and society, 45, 3, 178–192.

Narbón-Perpiñá, I./De Witte, K. (2018a). Local governments' efficiency: A systematic literature review – part I, in: International Transactions in Operational Research, 25, 2, 431–468.

Narbón-Perpiñá, I./De Witte, K. (2018b). Local governments' efficiency: A systematic literature review – part II, in International Transactions in Operational Research, 25, 4, 1107–1136.

NIPOS (2016): Culture Czech Republic in Numbers for Year 2015. Nipos. [online] Available on: http://www.nipos-mk.cz/wp-content/uploads/2013/05/Kultura_v_cislech_2016_web.pdf.

Nemec, J./Plaček, M./Ochrana, F./Půček, M. /Křápek, M. (2018): Devolution in the Czech and Slovak institutions of cultural heritage, in: Museum Management and Curatorship, 33, 6, 594–609.

Nemec, J./Špaček, D./Suwaj, P./Modrzejewski, A. (2012): Public Management as a University Discipline in New European Union Member States: The Central European case, in: Public Management Review, 14, 8, 1087–1108.

Nekola, M./Kohoutek, J. (2016): Policy work at the sub-national level: Analytical styles of Canadian and Czech directors and managers, in: Canadian public administration, 52, 2, 289–309.

Ochrana, F./Plaček, M./Půček, M.J. (2016): Shortfall of Strategic Governance and Strategic Management in the Czech Republic, in: Central European Journal of Public Policy, 10, 2, 30–47.

Ochrana, F./Půček, M.J./Plaček, M./Šimčík, A. (2018): Management a hospodaření muzeí. Prague: Karolinum.

Osborne, D./Gaebler, T. (1992). Reinventing Government. Reading, MA: Addison-Wesley.

Osborne, S.P. (2017): Public management research over the decades: what are we writing about?, in: Public Management Review, 19, 2, 109–113.

Overman, S. (2020): Aligning accountability arrangements for ambiguous goals: the case of museums, Public Management Review, in press. DOI: 10.1080/14719037.2020.1722210

Pei-Hsuan, T./Chin-Tsai, L. (2016); Creating a Business Strategy Evaluation Model for National Museums Based on the Views of Curators, in: Curator The Museum Journal, 59, 3, 287–303.

Pérez-López, G./Prior, D./Zafra-Gómez, J.L. (2015): Rethinking New Public Management Delivery Forms and Efficiency: Long-Term Effects in Spanish Local Government, in: Journal of Public Administration Research and Theory, 25, 4, 1157–1183.

Plaček, M./Nemec, J./Ochrana, F./Půček, M./Křápek, M./Špaček, D. (2020): Do performance management schemes deliver results in the public sector? Observations from the Czech Republic, in: Public Money & Management, in press. DOI: 10.1080/09540962.2020.1732053

Plaček, M./Ochrana, F./Křápek, M./Půček, M. (2017): Does Decentralized Leadership Influence the Performance of Czech Museums?, in: Nispacee Journal of Public Administration and Policy, 10, 1, 121–139.

Plaček M./Ochrana, F./Krápek, M/Půček M./Špaček, D. (2017): Does the Financial Self-suffi-
ciency of Municipalities Affect Efficiency of the Museums which they Founded? (A Case
Study from the Czech Republic), in: Lex localis – journal of local self-government, 15, 3,
479–494.

Plaček,M./Ochrana,F./Půček, M./Nemec, J./Křápek, M. (2018): Devolution in the Czech and
Slovak institutions of cultural heritage, in: Museum Management and Curatorship, 33, 6,
594–609.

Plaček, M./Ochrana, F./Nemec, J./Půček, M. (2020): Fiscal decentralization reform: The Im-
pact on the efficiency of local government. New York: Springer Nature.

Plaček, M./Půček, M.J./Šilhánková, V. (2017): New trends in the strategic management of the
museums in the Czech Republic, in: Museum Management and Curatorship, 32, 4, 302–
318.

Plaček, M./Špaček, D./Ochrana, F./Křápek, M./Dvořáková, P. (2019): Does excellence mat-
ter? National quality awards and performance of Czech municipalities, in: Journal of East
European Management Studies, 24, 5, 589–613.

Poll, R. (2018): Quality in museums and libraries: a comparison of indicators. Performance
measurement and metrics, in: Performance Measurement and Metrics, 19, 2, 90–100.

Pollanen R./Abdel-Maksoud, A./Elbana, S./Mahama, H. (2017): Relationships between strate-
gic performance measures, strategic decision-making, and organizational performance: em-
pirical evidence from Canadian public organization, in: Public Management Review, 19, 5,
725–746.

Pollitt, Ch./Bouckaert, G. (2011): Public Management Reform. A Comparative Analysis. New
Public Management, Governance, and the Neo-weberian state. Third edition. Oxford: Uni-
versity Press.

Pollitt, Ch./Bouckaert, G. (2017). Public management reform. A comparative analysis into the
age of austerity. Fourth edition. Oxford: University Press.

Půček, M./Plaček, M./Ochrana, F./Vích, Z. (2015): Benchmarking muzei (kultury) – projekty
a zkušenosti, in: Prameny a studie, 25, 23–37.

Rutgers, M.R. (2015): As Good as it Gets? On the Meaning of Public Value in the Study of
Policy and Management, in: American Review of Public Administration, 45, 1, 29–45.

Seifert, S./Nieswand, M. (2013): What drives intermediate local governments spending effi-
ciency: The case of French Départements. In: Local Government Studies, 40, 5, 766–790.

Simar, L./Wilson, P.W. (1998): Sensitivity Analysis of Efficiency Scores: How to Bootstrap in
Nonparametric Frontier Models, in: Management Science, 44, 1, 49–61.

Simm, J./Besstremyannaya, G./Simm, M.J. (2016): Package 'rDEA'. [online] Available at
https://cran.r-project.org/web/packages/rDEA/index.html

Skinner, S.J./Ekelund, R.B. Jr./Jackson, J.D. (2009): Art Museum Attendance, Public Fund-
ing, and the Business Cycle, in: American journal of economics and sociology, 68, 2, 491–
516.

Shoup, D.D./Baraldi, S.B./Zan, L. (2014): A centralized decentralization: outsourcing in the
Turkish cultural heritage sector, in: International Journal of Cultural Policy, 20, 1, 54–77.

Srakar, A./Dacič-Kodrič, E./Koman, K./Kavaš, D. (2017): Efficiency of Slovenian public gen-
eral libraries: a data envelopment analysis approach, in: Lex Localis – journal of local self-
government, 15, 3, 559–581.

Storto, C. (2016): The trade-off between cost efficiency and public service quality: A non-parametric frontier analysis of Italian major municipalities, in: Cities, 51, 52–63.

Šulc, M. (2014): Návrh modelu měření a hodnocení výkonnosti příspěvkových organizací. Doctoral thesis. Jihočeská univerzita v Českých Budějovicích: Ekonomická fakulta.

Taheri, H./Ansari, S. (2013): Measuring the relative efficiency of cultural-historical museums in Tehran: DEA approach, in: Journal of Cultural Heritage, 14, 431–438.

Tavakol, M./Dennick, R. (2011): Making sense of Cronbach's alpha, in: International journal of medical education, 2, 53–55.

Tomazevic, N./Tekavcic, M./Peljhan, D. (2017): Towards excellence in public administration: organisation theory-based performance management model, in: Total quality management & business excellence, 28, 5–6, 578–599.

Tommasi, M./Weinschelbaum, F. (2007): Centralization vs. Decentralization: A principal-agent analysis, in: Journal of public economic theory, 9, 2, 369–389.

Thompson, F./Rizova, P. (2015): Understanding and Creating Public Value: Business is the Engine, Government the Flywheel (and also the Regulator), in: Public Management Review 17, 4, 565 – 586.

Turbide, J./Laurin, C. (2009): Performance Measurement in the Arts Sector: The Case of the Performing Arts, in: International journal of arts management, 11, 2, 56–70.

Van Dooren, W./Bouckaert, G./Halligan, J. (2015): Performance Management in the Public Sector. Routlege Abingdon.

Veselý, A./Nekola, M./Hejzlarová, E. (2016): Policy analysis in the Czech Republic. Brystol: Policy Press.

Vicente, E./Camarero, C./Garrido, M.J. (2012): Insights into Innovation in European Museums: The impact of cultural policy and museum characteristics, in: Public Management Review, 14, 5, 649–679.

Vojtíšková, K./Lorencová, R., (2015): Public funding of culture in the Czech republic since the fall of the iron curtain: conterporary dilemmas, in: International journal of cultural policy, 21, 5, 529–553.

Wooldridge, J. (1999): Econometric Analysis of Cross Section and Panel Data. MIT Press.

Wynen, J./Verhoest, K. (2016): Internal Performance-Based Steering in Public Sector Organizations: Examining the Effect of Organizational Autonomy and External Result Control, in: Public performance & management review, 39, 3, 535–559.

Wynen, J./Verhoest, K./Rubecksen, K. (2014): Decentralization in public sector organizations: Do Organizational Autonomy and Result Control Lead to Decentralization Toward Lower Hierarchical Levels?, in: Public performance & management review, 37, 3, 496–520.

Act nr. 122/2000 Sb. Act on the Protection of Museum Collections.