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ABSTRACT

This paper aims to investigate the influence of expense item 'Energy' on excellence of school operation. The study was conducted on a sample of 33 primary and 13 secondary schools established by the County of Varaždin, in the area of financing decentralised functions. The following study task was set: 'Determine the Model of influence of expense item "Energy" on excellence of school operation'. Based on research that incorporated the Pareto Principle and descriptive statistics in the area of quartile, correlation and regression analysis, a model for determining the influence of expense item 'Energy' on excellence of school operation in primary and secondary education was provided for the area covered by local government. Based on the results and the generated model, suggestions were made for the improvement of the primary and secondary education system at local government level of operation.

1. Introduction

The Croatian Primary and Secondary Education Act defines mandatory financing of primary and secondary education by local government (Local and Regional Government Financing Act, Croatian Official Gazette, 2012). Local government provides financial resources for the financing of operating expenses, for example material and financial expenses of schools, commuting to work of secondary school staff, maintenance of school and provision of non-financial assets (Decision on Financing Decentralised Functions, Official Journal of the Varaždin County, 2015), (Decision on the Criteria and Scale for Determining Balance Sheet Rights for Financing Minimum Standard Financing Demands Relating to the Primary Education Public Needs in 2015, Croatian Official Gazette, 2015), (Decision on the Criteria and Scale for Determining Balance Sheet Rights for Financing Minimum Standard Financing Demands Relating to the Secondary Education and Students Dormitories Needs in 2015, Croatian Official Gazette, 2015), (Ordinance on the Method of Calculation Relating to

Budgetary Funds Intended to Local/Regional Governments for Decentralised Functions of Local and Regional Government for 2015, Croatian Official Gazette, 2015).

All of these expenses comprise decentralised functions. Decentralisation of the functions from the state level to regional self-government units is not only a transfer of resources, it also represents democratisation of decision-making (Lukeš-Petrović, 2002).

The method of managing operating expenses reflects the attitude of the County, as a founder, towards the system for which it is responsible, and the overall collaborating community in the area of education. Implementing the principle of excellence into management of expenses means that the educational system of the County is based on the traditional culture of work and professionalism of all its stakeholders (Oslić, 2008), (Belak, 2014).

1.1. Description of the study subject

The County, being the founder of primary and secondary schools in its territory, has managed the education system in compliance with the Law (Primary and Secondary Education Act – consolidated text, Croatian Official Gazette, 2012) and the County Development Strategy (County Development Strategy, Official Journal of the Varaždin County, 2010) for more than 10 years now, and has a large amount of operational management data for these schools. The majority of these data have been archived using information technology. In addition, new data are created daily, both in the County IT system and in educational systems (Varga, 2012). In a situation when there are insufficient funds to finance education, a question arises relating to the area of financing education: how to use data containing finance information in making business decisions?

Considering that the expense item 'Energy' is an extremely important item in financing education and also influences excellence of school operation, the subject of this study is to research the influence of the expense item 'Energy' on school operational excellence. The research conducted for the purposes of this paper was carried out in the Varaždin County school system. Varaždin County is the founder of 13 secondary and 33 primary schools attended by a total of 19,000 pupils, and employs 2,800 teachers in 108 facilities.

1.2. Research objective and tasks

The objective of this research is to create a model of influence of the expense item 'Energy' on excellence of school operation. The model will be used to rank schools according to four levels of school operational excellence and to determine threshold values for every level of excellence.

Creating a model of influence of the expense item 'Energy' on the excellence of school operation will also enable implementation of a decision support system to support the necessary actions which have to be taken to improve and develop operations.

Based on this objective, the following research tasks have been defined:

- To investigate expenses financed in education,
- To determine a model of influence of expense item 'Energy' on excellence of school operation; and
- To determine a model of ranking schools by levels of the excellence of school operation.

1.3. Fundamental hypotheses of the research

H0 – Creation of a model of influence of expense item 'Energy' on excellence of school operation is possible;

H1 – There is a large quantity of operative data stored in a digital form; and

H2 – Data processing as a quick response to operative changes is possible.

The validity of H0 is to be proven by creating a model of influence of expense item 'Energy' on excellence of school operation.

The validity of H1 is to be proven during the analysis of school financing and during implementation of the model.

The validity of H2 is to be proven or denied by the results of the implemented model.

1.4. Research methodology

The proposed research is the first scientific research conducted in Croatian practice that deals with the creation of a model of influence of the expense item 'Energy' on the excellence of school operation.

From studying the available literature, it is clear that this area has not been researched so far. The most relevant research in this area is found in Stoiljković & Stoiljković (2006), Erić, Stefanović, & Stevanović (2006) and Gelo (2010). In Gelo (2010), energy, or more precisely energy indicators, is used as indicator for country development, while Erić et al. (2006) and Stoiljković & Stoiljković (n.d.) explain reengineering and process improvement.

This study incorporated the Pareto principle and quantitative research methodology.

The Pareto principle, also known as the 80/20 Principle, asserts that a minority of causes, inputs or effort usually lead to a majority of the results, outputs or rewards (Koch, 1998).

The quantitative approach relies on the theory or the hypothesis focused on a certain form of measuring or variable classification, and is a part of quantitative or explanatory paradigm which, in addition to the qualitative, that is, the paradigm of understanding, creates scientific paradigms in education research (Mužić, 2004), (Verčić Tkalac, Sinčić Čorić, Dubravka, & Pološki Vokić, Dubravka, 2010).

In addition to the Pareto principle, the research will use descriptive statistics in quartile, correlation and regression analysis, using MS Excel 2010 (Grčić, 2004), (Papić, 2014).

2. The analysis

School expense financial plans can be presented at the following three levels: group, sub-group and position (Rulebook on Budgetary Accounting and Account Plan, Croatian Official Gazette, 2010). Group and sub-group details are aggregate and are not operative. Details of position are detailed; they serve in operative management and are shown as a 4-digit number (Rulebook on Budgetary Accounting and Account Plan, Croatian Official Gazette, 2010).

Group-level data show the structure of the financial plan and the main types of expenses, which include 32 Material Expenses, 42 Expenses for Procurement of Nonfinancial Assets

and 34 Financial Expenses (Rulebook on Budgetary Accounting and Account Plan, Croatian Official Gazette, 2010).

Data at the subgroup level show the planned development of the financial plan, which includes 322 Material and Energy Expenses, 321 Expenses for Staff, 323 Expenses for Services, 329 Other Expenses, 421 Buildings, 422 Plant and Equipment and 343 Other Financial Expenses. Section-level data show the execution of a financial plan (Rulebook on Budgetary Accounting and Account Plan, Croatian Official Gazette, 2010).

This study aims to recognise the influence and significance of budget expenses shown under position and presented as a 4-digit number (The Varaždin County Budget, Official Journal of the Varaždin County, 2014), including the description and the Pareto principle whose analysis demonstrates which expenses, as amounts and percentages, participate in school operation.

The Pareto principle is a tool that identifies the relative importance of the data of the execution of the financial plan. Execution of a financial plan is monitored at the section level (The Varaždin County Budget, Official Journal of the Varaždin County, 2014). Education financing plans for secondary education and primary education show expenses which can be influenced by good business practice and subsequently improved, but there are also those whose purpose is specifically defined by the law, collective agreements and other applicable legislation and their improvement is not possible (Huđek, 2014). These expenses, which cannot be influenced, are excluded from further analysis of financing education.

There are 19 expenses in secondary education whose improvement can be influenced (Table 1); they are analysed according to the Pareto principle.

Vilfredo Pareto introduced the concept of distribution (80–20 Rule) according to which 20% of the sample causes 80% of consequences, and established the principle of progress according to which progress as a distribution causes improvement for one without at the same time causing any harm or damage to the other (Grosfeld-Nir, Ronen, & Kozlovsky, 2007). Craft and Leake have performed a study to determine if the heuristic approach of the Pareto rule is applicable in a decision-making process (Craft & Leake, 2002). The survey

Table 1. Expenses for Decentralised Functions in Secondary Education for Pareto Analysis.

Position	Description	Amount	%	Pareto
3223	Energy	5,574,000	51.4%	51.4%
3234	Utility Expenses	1,057,800	9.7%	61.1%
3221	Office Stationery	928,527	8.6%	69.7%
3222	Material and Raw Materials	741,000	6.8%	76.5%
3231	Telephone, Post Office and Transport Services	407,100	3.8%	80.2%
3237	Intellectual and Personal Services	344,000	3.2%	83.4%
3233	Information and Marketing Services	337,000	3.1%	86.5%
3225	Petty Inventory	235,550	2.2%	88.7%
3213	Professional Training of Staff	227,000	2.1%	90.8%
3224	Material and Parts	221,000	2.0%	92.8%
3239	Other Services	182,900	1.7%	94.5%
3238	IT Services	151,250	1.4%	95.9%
3292	Insurance Premiums	123,200	1.1%	97.0%
3299	Other Unlisted Operating Expenses	121,000	1.1%	98.1%
3431	Banking Services	93,100	0.9%	99.0%
3434	Other Unlisted Financial Expenses	57,000	0.5%	99.5%
3293	Entertainment	29,000	0.3%	99.8%
3294	Membership Fees	21,000	0.2%	100.0%
3433	Penalty Interest	3,000	0.0%	100.0%

Source: Authors' calculation.

outlined that a decision-making process based on an accepted management heuristic allows easy and speedy decisions for complex issues, increases the probability of returned value to the organisation, and is consistent with upper management's perceptions of value returned by individual project funded (Craft & Leake, 2002).

The results of the Pareto analysis for secondary education, presented in Table 1, show that expense '3223 Energy' in secondary school operation includes 51.4% of financial assets, and that '3234 Utility Expenses', '3221 Office Stationery', '3222 Material and Raw Materials' and '3231 Telephone, Post Office and Transport Services' include 80.2% of financial assets. These expenses represent 20% of total expenses, and a priority for corrective action of activating the principle of progress will result in improvements. Analysis confirms that the expense item '3223 Energy' is of the utmost importance. The financial resources shown in Table 1 are used for financing decentralised functions in secondary schools. As the criterion for distribution/financing secondary schools the number of classes was selected, and the scale is defined using a polynomial model

$$y = -361.09x^2 + 58,005x + 7,736$$

where x is the number of classes and y is the annual financial amount for the relevant school (Huđek, 2014).

Primary education expenses whose improvement can be influenced are shown in Table 2; there are 21 of them, and they are analysed according to the Pareto principle.

The results of the Pareto analysis for primary education presented in Table 2 show that expense '3223 Energy' in primary school operation includes 60.52% of financial assets, and that '3221 Office Stationery', 3234 Utility Expenses' and '3231 Telephone, Post Office and Transport Services' include 80.43% of financial assets. These expenses are a priority for corrective action to improve operation in primary education. Analysis confirms that the expense item '3223 Energy', just as in the case of secondary education, is of utmost importance.

Table 2. Expenses for Decentralised Functions in Primary Education for Pareto Analysis.

Position	Description	Amount	%	Pareto
3223	Energy	10,356,300	60.52%	60.52%
3221	Office Stationery	1,764,000	10.31%	70.83%
3234	Utility Expenses	995,000	5.81%	76.64%
3231	Telephone, Post Office and Transport Services	648,700	3.79%	80.43%
3238	IT Services	508,500	2.97%	83.40%
3225	Petty Inventory	437,800	2.56%	85.96%
3224	Material and Parts	389,800	2.28%	88.24%
3239	Other Services	326,500	1.91%	90.15%
3213	Professional Training of Staff	280,600	1.64%	91.79%
3222	Material and Raw Materials	270,000	1.58%	93.37%
3299	Other Unlisted Operating Expenses	253,100	1.48%	94.84%
3292	Insurance Premiums	244,400	1.43%	96.27%
3237	Intellectual and Personal Services	213,500	1.25%	97.52%
3431	Banking Services	133,200	0.78%	98.30%
3233	Information and Marketing Services	89,500	0.52%	98.82%
3434	Other Unlisted Financial Expenses	81,600	0.48%	99.30%
3294	Membership Fees	67,300	0.39%	99.69%
3293	Entertainment	48,500	0.28%	99.98%
3433	Penalty Interest	2,200	0.01%	99.99%
3235	Lease and Rents	2,000	0.01%	100.00%

Source: Authors' calculation.

Financial resources shown in Table 2 are used for financing decentralised functions in primary schools. As the criterion for distribution/financing the primary schools the number of classes was selected, and the scale is defined using a polynomial model

$$y = 329.94x^2 + 3,850.6x + 341,704$$

where x is the number of classes and y is the annual financial amount for the related school (Huđek, 2014).

3. Implementation

The implementation of a model of influence of expense item 'Energy' on excellence of school operation will use descriptive statistics in quartile, correlation and regression analysis by using MS Excel 2010.

The previous section has shown that financing of primary and secondary education includes expenses which can be influenced by the operation of schools themselves. The Pareto chart has shown that there are five expenses for secondary schools and four for primary schools which are subject to the 80–20 Pareto rule. Thus, excellence of business operation will be defined according to the ratio of managing these expenses. In this way, monitoring and improvements applied to these expenses result in more efficiency and excellence in operation, because the remaining '80%' of expenses represent '20%' of costs. Monitoring and improvements applied to over 20% expenses would require the same procedures and activities, but the efficiency would be much lower.

Also, it was determined that, amongst all of them, expense '3223 Energy' represents the highest financial amount and is of the utmost importance.

As proven, in addition to expense item '3223 Energy' in primary education amounting to 60.52% of costs, there is also '3221 Office Stationery', '3224 Utility Expenses' and '3231 Telephone and Post Office Services'. These total 19.91% of overall costs. In secondary education, in addition to expense item '3223 Energy' amounting to 51.4% of costs. there is also '3234 Utility Expenses', '3221 Office Stationery', '3222 Material and Raw Materials' and '3231 Telephone and Post Office Services'. These items total 28.9% of overall costs. These expenses represent criteria used to determine excellence of school operation. The measuring unit is the monthly financial amount relating to expenses stated earlier compared with the number of classes, which represents the criterion for financing of schools (Huđek, 2014).

Table 3 for secondary schools shows monthly amounts stated per class for expenses subject to the Pareto rule, in particular for expense item '3223 Energy'.

A measure of spread is used to describe the variability in a sample or population. It gives an idea of how well the mean represents the data. In our case, if the population is 33 primary and 13 secondary schools, the optimum is to use the quartiles because the spread of data in quartiles is small and the mean is representative. That means that the improvement is performed on quartiles and priority of improvement is on the schools in the 4th quartile. The same principle is used for the schools in the 1st quartile, except that these schools represent the excellence of school operation.

Expenses for schools have been distributed in four groups (quartiles) (Papić, 2014). The groups are graphically presented so that green represents the 1st quartile, yellow the 2nd, yellow-red the 3rd and red the 4th.

Table 3. Expenses for Secondary Schools per Quartiles.

Operational Excellence			Pareto		3223 Energy	
			Financial Amount per		Financial Amount per	
No.	Secondary School	No. of Classes	Class	Quartil	Class	Quartil
1	Business School Varaždin	43	1,407	1	859	1
2	Music School in Varaždin	35	1,210	1	893	1
3	Medical School Varaždin	17	1,694	1	1,078	1
4	First gymnasium Varaždin	40	2,162	2	1,279	2
5	Electromechanical School Varaždin	49	1,921	2	1,344	2
6	'Arboretum Opeka' School Vinica	22	2,131	2	1,390	2
7	Second gymnasium Varaždin	23	2,242	3	1,442	2
8	Mechanical engineering and transport School Varaždin	32	2,284	3	1,620	3
9	Architectural, Natural Science and Mining School Varaždin	35	2,136	2	1,631	3
10	High School Ivanec	27	2,181	3	1,654	3
11	Vocational School Varaždin	33	2,286	4	1,730	4
12	High School Ludbreg	4	2,894	4	1,739	4
13	High School Novi Marof	3	2,514	4	1,806	4

Source: Authors' calculation.

The regression analysis shows that the coefficient of the financial value correlation per class and the quartile for expense item '3223 Energy' amounts to 0.95064967, which indicates strong correlation. It also shows that the coefficient of determination, as the indicator of regression model representativeness, amounts to 0.90373479, resulting in 90.37% connections between financial values and quartiles that can be demonstrated by a linear model.

$$y = 0.00027959x - 2.3038696$$

where variable x is the financial value and variable y is the quartile used to determine excellence.

Figure 1 shows a polynomial model which demonstrates that 96.71% of relationships between financial expense item '3223 Energy' and quartiles determining excellence of business operation and the rank of school can be presented by implementation of the following polynomial model:

$$y = 3E - 06x^2 - 0.0056x + 3.3122$$

where variable x is the financial value for expense item '3223 Energy' per class for each secondary school, and variable y is the quartile used to determine excellence and rank of business operation of each secondary school.

Figure 2 shows a polynomial model which demonstrates that 85.62% of relationships between financial expense item '3223 Energy' and the Pareto quartile determining excellence of business operation can be presented by implementation of the following polynomial model:
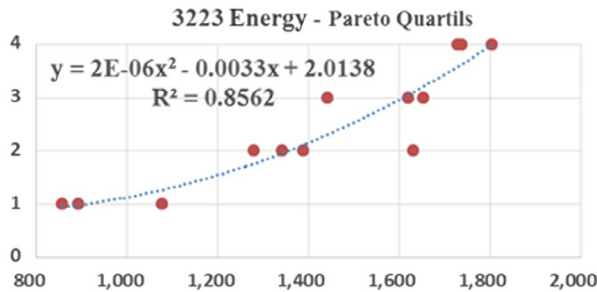
$$y = 2E - 0.6x^2 - 0.0033x + 2.0138$$

where variable x is the financial value of expense item '3223 Energy' per class for each secondary school, and variable y is the quartile used to determine 'Pareto' excellence of each secondary school.
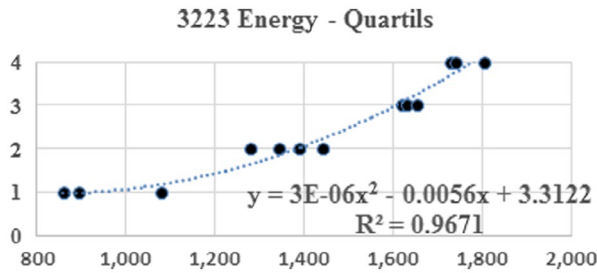
Figure 1. A Polynomial Model of Excellence Relating to Expense Item '3223 Energy' for Secondary Schools. Source: Authors' calculation.

Figure 2. A Polynomial Model of Excellence Relating to Expense Item '3223 Energy' for Secondary Schools. Source: Authors' calculation.

Such a high level of model representativeness indicates the significant impact of expense item 'Energy' on the excellence of secondary school operation.

Table 4 for primary schools shows monthly amounts stated per class for expenses subject to the Pareto rule, in particular for expense item '3223 Energy'. Expenses for schools have been distributed in four groups (quartiles) (Papić, 2014). The groups are graphically presented so that green represents the 1st quartile, yellow the 2nd, yellow-red the 3rd and red the 4th.

The regression analysis shows that the coefficient of the financial value correlation per class and the quartile for expense item '3223 Energy' amounts to 0.939577406, which indicates strong correlation. It also shows that the coefficient of determination, as the indicator of regression model representativeness, amounts to 0.882805701, resulting in 88.28% connections between financial values and quartiles that can be demonstrated by a linear model.

$$y = 0.002842047x - 1.417766409$$

where variable x is the financial value and variable y is the quartile used to determine excellence and rank of school.
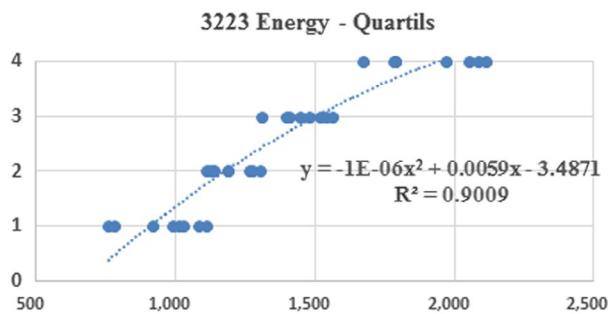
Figure 3 shows a polynomial model which demonstrates that 90.09% of relationships between financial expense item '3223 Energy' and quartiles determining excellence of business operation can be presented by implementation of the following polynomial model.

$$y = -1E - 06x^2 + 0.0059x - 3.4781$$

Table 4. Primary School Expenses Per Quartiles.

Operational Excellence			Pareto		3223 Energy	
			Financial Amount per Class	Quartil	Financial Amount per Class	Quartil
No.	School	No. of Classes				
1	Sveti Ilija Primary School	16	1,187	1	760	1
2	Martijanec Primary School	16	1,161	1	781	1
3	Sračinec Primary School	27	1,225	1	916	1
4	Podrute Primary School	16	1,392	1	991	1
5	Donja Voća Primary School	14	1,702	2	1,012	1
6	Šemovec Primary School	13	1,397	1	1,026	1
7	Svibovec Primary School	14	1,533	1	1,081	1
8	Veliki Bukovec Primary School	18	1,569	2	1,111	1
9	Maruševec Primary School	29	1,429	1	1,113	2
10	Petrijanec Primary School	29	1,551	2	1,123	2
11	Ivanec Primary School	42	1,480	1	1,133	2
12	Sveti Đurđ Primary School	16	1,561	2	1,139	2
13	Kamenica Primary School	12	1,694	2	1,188	2
14	Tužno Primary School	14	1,762	2	1,190	2
15	Jalžabet Primary School	16	1,714	2	1,266	2
16	Kneginec Primary School	22	1,619	2	1,278	2
17	Ludbreg Primary School	34	1,771	3	1,303	2
18	Vinica Primary School	18	1,787	3	1,310	3
19	Novi Marof Primary School	49	1,973	3	1,395	3
20	Višnjica Primary School	15	1,872	3	1,406	3
21	Lepoglava Primary School	17	1,826	3	1,449	3
22	Trnovec Primary School	19	1,895	3	1,478	3
23	Radovan Primary School	13	1,959	3	1,517	3
24	Bisag Primary School	8	1,760	2	1,542	3
25	Bednja Primary School	19	1,975	4	1,562	3
26	Varaždinske Toplice Primary School	21	1,944	3	1,671	4
27	Cestica Primary School	22	2,133	4	1,784	4
28	Klenovnik Primary School	8	2,660	4	1,785	4
29	Beletinec Primary School	7	2,536	4	1,786	4
30	Vidovec Primary School	22	2,528	4	1,970	4
31	Visoko Primary School	8	2,864	4	2,051	4
32	Breznički HumPrimary School	9	2,695	4	2,084	4
33	Ljubešćica Primary School	10	2,973	4	2,115	4

Source: Authors' calculation.

Figure 3. A Polynomial Model of Excellence Relating to Expense Item '3223 Energy' for Primary Schools. Source: Authors' calculation.
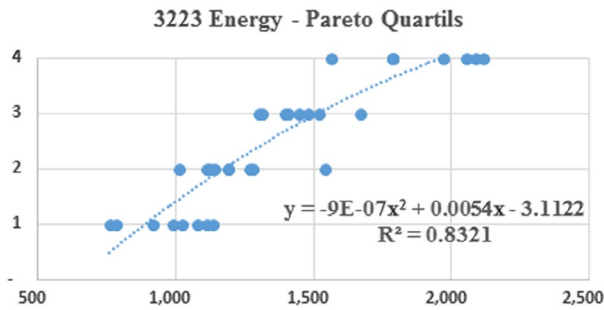
Figure 4. A Polynomial Model of Expense Item 'Energy' Implemented on Pareto Quartiles for Primary Schools. Source: Authors' calculation.

where variable x is the financial value for expense item '3223 Energy' per class for each primary school, and variable y is the quartile used to determine excellence and rank of business operation of each primary school.

Figure 4 shows a polynomial model which demonstrates that 83.21% of relationships between financial expense item '3223 Energy' and the Pareto quartile determining excellence of business operation can be presented by implementation of the following polynomial model:

$$y = -9E - 07x^2 + 0.0054x - 3.1122$$

where variable x is the financial value for expense item '3223 Energy' per class for each primary school, and variable y is the quartile used to determine 'Pareto' excellence of each primary school.

Such a high level of model, 85.72%, indicates a significant impact of expense item 'Energy' on the excellence of primary school operation.

4. Conclusion

There is no other research such as that proposed in this study, and this study has resulted in the following contributions:

1. Research and a comprehensive study of expenses at the level of position, which are to be financed in education, were conducted on a sample comprising 33 primary and 13 secondary schools funded by Varaždin County. The research demonstrated that there are 27 expense items in both and secondary and primary education. The Pareto principle was also used to analyse the percentage of each expense in school operation. The conducted research and completed analysis have proven the validity of hypothesis H1, that there is a large quantity of operative data stored in a digital form.
2. Research and a comprehensive study of expenses allowing for improvements were conducted. In secondary education improvements are possible for 19 expenses, and in primary education 21. The Pareto principle was also used to analyse the percentage of each expense in school operation, and it was determined that, when it comes to financing, expense '3223 Energy' is of utmost importance both in primary and

secondary education. The conducted research and completed analysis have proven the validity of hypothesis H1, that there is a large quantity of operative data stored in a digital form.

3. A scale for financing secondary schools by implementing the polynomial model

$$y = -361.09x^2 + 58,005x + 7,736$$

was determined, where x represents the number of classes in a secondary school and y the annual financial amount for school operation (Huđek, 2014). Model representativeness is 85.72%. The scale for financing primary schools by implementing the polynomial model

$$y = 329.94x^2 + 3,850.6x + 34,704$$

was determined, where x represents the number of classes in a primary school and y the annual financial amount for school operation (Huđek, 2014). Model representativeness is 85.67%.

4. A model of influence of expense item 'Energy' on excellence of school operation was determined and created. For secondary schools it was determined by implementing the polynomial model

$$y = 3E - 06x^2 - 0.0056x + 3.3122$$

with representativeness of 96.71% (Figure 1). Likewise, the model for primary schools was also determined by implementing the polynomial model

$$y = -1E - 06x^2 + 0.0059x - 3.4781$$

with representativeness of 90.09% (Figure 3). The regression analysis of samples confirmed validity of samples in Tables 3 and 4 for secondary and primary schools, respectively. Determination and creation of these models have proven the validity of hypothesis H0 that creation of a model of influence of expense item 'Energy' on excellence of school operation is possible.

5. A model of ranking schools by levels of operational excellence was determined and created. The ranking was conducted by implementation of quartile analysis and a polynomial model. Ranking of secondary schools is shown in Table 3, and the related model in Figure 2. Ranking of primary schools is shown in Table 4, and the related model in Figure 4. Determination and creation of these models and the resulting ranking of schools by levels of excellence has proven the validity of hypothesis H2, that data processing, as a quick response to operative changes, is possible because any change relating to the scope of activities depending on the number of classes, which is the criterion for financing or relating to energy consumption, may influence the results attributed to excellence of school operation.From a practical aspect, the model and its results define priorities for improvement. The priorities are schools of the 4th quartile, and these are to be included in the operative programmes of improvements in the area of energy efficiency and renewable energy sources. Such an approach to the expense item 'Energy' and determination of excellence of operation is also used to determine schools which are set as an example of excellence.

Table 5 shows threshold values for the entire primary and secondary school system given per quartile. Figure 5 demonstrates a model of the impact of expense item 'Energy' on the excellence of business operation for both primary and secondary schools.

Table 5. Quartile Threshold Values for Primary and Secondary Schools.

Operational Excellence			Pareto		3223 Energy	
No.	School	No. of Classes	Financial Amount per Class	Quartile	Financial Amount per Class	Quartile
1	Sveti Ilija Primary School	16	1,187	1	760	1
2	Veliki Bukovec Primary School	18	1,569	2	1,111	1
3	Maruševec Primary School	29	1,429	1	1,113	2
4	Electromechanical School Varaždin	49	1,921	2	1,344	2
5	'Arboretum Opeka' School Vinica	22	2,131	3	1,390	3
6	High School Ivanec	27	2,181	4	1,654	3
7	Varaždinske Toplice Primary School	21	1,944	3	1,671	4
8	Ljubešćica Primary School	10	2,973	4	2,115	4

Source: Authors' calculation.

$$y = -7E\text{-}07x^2 + 0.0049x - 2.8167$$
$$R^2 = 0.8057$$
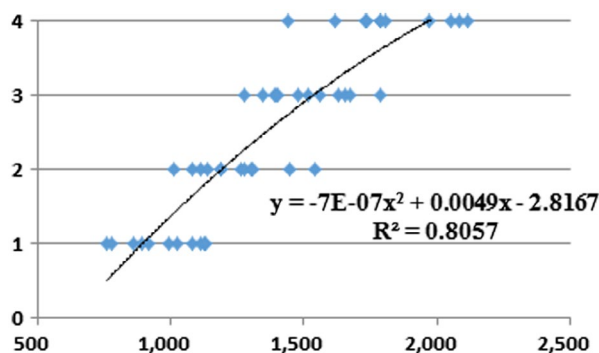
Figure 5. A Polynomial Model of Expense Item 'Energy' Implemented on Pareto Quartiles for Primary and Secondary Schools. Source: Authors' calculation.

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