

INDEX OF RATIONALITY

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GOALS AND METHODOLOGY

The Center for Civil Communications is the only non-governmental organization in the Republic of North Macedonia that conducts direct and comprehensive monitoring of public procurements in the country. In an attempt to make additional contribution to advancing state-of-affairs in this field, the Centre initiated development of the so-called index of rationality for public spending. The aim of this instrument is to measure cost-effectiveness of public spending, detect bottlenecks in the system of public procurements, and ultimately influence institutions to engage in more cost-effective spending of their budgets that are sustained by taxpayers.

The index of rationality is developed by comparing prices under which different institutions have purchased same goods, services or works. In addition to price comparisons, the fact that one index covers same type of goods, services or works allows identification of different behaviour on the part of state institutions when implementing same types of public procurements.

The index is envisaged to serve state institutions as benchmark on improving cost-effectiveness of their procurements, i.e. rational public spending. Having in mind that index-included prices include average prices attained by institutions and do not represent actual or market values, state institutions should strive to achieve economical public spending, especially when other institutions have attained more favourable market prices for the same procurements.

Differences in price paid by institutions for same type of goods and services are indicative of the need for more detailed market research prior to tender announcement and harmonized approach on the part of contracting authorities when procuring the same type of products.

The sample for development of this index covers all contracting authorities at national and local level, i.e. from ministries and municipalities, public enterprises and agencies, to schools and kindergartens.

Development of the index of rationality relies on primary and secondary data sources, as follows:

- Electronic Public Procurement System; and
- Freedom of Information (FOI) requests related to technical characteristics of procurement subjects, prices attained and quantities purchased.

It should be noted that the index of rationality will disclose the names of contracting authorities, but not the names of companies awarded procurement contracts (although these data are also available), because the responsibility for rational public spending lies with contracting authorities. Of course, this does not mean that bidding companies are exempted from acting in compliance with the law. Hence, company names are indicated only in the context of commenting findings from this research study.



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The Index of Rationality no.18 is developed for the following three types of products:

- **school interactive boards;**
- **pellets with minimum heating capacity of 4.6 kwh/kg and pellets with heating capacity of 4.9 to 5.3 kwh/kg; and**
- **print paper.**

Development of individual indices for these products covered a total of 36 national and local institutions that have organized public procurements for these types of goods in the second half of 2021.

For the purpose of obtaining information related to prices of analysed goods and services, as well as their technical characteristics, FOI requests were sent to all contracting authorities whose public procurements are recorded in the Electronic Public Procurement System.

The idea behind the index of rationality for these three types of products is to detect possible differences in price and to help contracting authorities learn about price variations thereof that would allow them to work on improving rationality of their public spending in the future.

2.1.

Index of Rationality for Interactive Boards

The price paid by schools for procurement of interactive boards with dimensions of 1650x1250 millimetres and resolution of 32768x32767 pixels ranges from 31,219 MKD to 39,894 MKD. It is a matter of interactive board with recorded video presentations that can be used by maximum 6 users, with 2D and 3D drawing features, and support for Microsoft Office programs, etc.

The ratio between the lowest and the highest price for procurement of interactive boards is 1:1.28, which means that the highest price paid by primary school "Lirija" from village Buzalkovo is by 28% higher than the price paid by primary school "Mustafa Kemal Atatürk" from the Municipality of Plasnica. Both schools purchased interactive boards from the same bidding company, but in different quantities and under different tender competition. The most expensive boards are purchased under tender procedure presented with only one bid, while the cheapest board was purchased in tender procedure marked by competition among two bidding companies.

Index of Rationality for Interactive Boards
(price per 1 board with resolution of 32768x32767)

Contracting authority	Table dimensions (mm)	Price in MKD (VAT included)	Difference against the average
PS "Mustafa Kemal Atatürk", village Plasnica	1650x1250	31,219	-13.8%
PS "Elpida Karamandi", Bitola	1650x1250	34,054	-4.3%
SPS "St. Clement of Ohrid", Novo Selo	1650x1250	34,827	-2.0%
MPS "Cyril and Methodius", Sveti Nikole	1650x1250	34,994	-1.5%
PS "Pere Toshev", Rosoman	1650x1250	35,500	-0.1%
MPS "Risto Shuklev", Negorci	1650x1250	35,500	-0.1%
MPS "Metodij Mitevski Brico", Lozovo	1650x1250	35,500	-0.1%
MPS "Clement of Ohrid", Miravci	1650x1250	35,500	-0.1%
Average		35,531	0%
MPS "Vidoe Podgorec", Novo Selo	1650x1250	38,325	+7.3%
MPS "Lirija", v. Buzalkovo – Veles	1650x1250	39,894	+10.9%

*Average is calculated from prices paid by institutions included in the index for this procurement.

Initially, development of the index of rationality for interactive boards targeted all tender procedures announced in the second half of 2021. The Electronic Public Procurement System (EPPS) recorded a total of 39 contracting authorities that have announced this type of procurement. However, the index includes only 10 schools that have procured interactive boards with identical specifications, i.e. of same dimensions, screen resolution, number of users and other performance features.

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As shown in the index, the average price per interactive board is calculated at 35,531 MKD, whereby the lowest price is by 14% lower than the average, while the highest price is by 11% higher than the average.

The absence of any correlation between quantities purchased and prices attained is best represented by the fact that the school which has attained the lowest price purchased only one interactive board, unlike the school which has attained the highest price, but purchased 4 interactive boards. At the same time, primary school "Vidoe Podgorec" from Novo Selo purchased the highest number of boards (12) at above-average price.

Purchased quantity of interactive boards

Contracting authority	Number of boards	Difference of individual price against the average
PS "Mustafa Kemal Atatürk", v. Plasnica	1	-13.8 %
PS "Elpida Karamandi", Bitola	3	-4.3%
SPS "St. Clement of Ohrid", Novo Selo	3	-2.0%
MPS "Cyril and Methodius", Sveti Nikole	1	-1.5%
PS "Pere Toshev", Rosoman	4	-0.1%
PS "Risto Shuklev", Negorci	2	-0.1%
MPS "Metodij Mitevski Brico", Lozovo	10	-0.1%
MPS "Clement of Ohrid", Miravci	5	-0.1%
MPS "Vidoe Podgorec", Novo Selo	12	+7.3%
MPS "Lirija", v. Buzalkovo – Veles	4	+10.9%

*Quantities are established on the basis of relevant tender documents.

All interactive boards were purchased under tender procedures with announced procurement notice and used “lowest price” as the selection criterion, and all of them have planned electronic auction for downward bidding. This provides the conclusion that differences in price cannot be justified with the type of procurement procedures organized. However, having in mind the weaknesses of the system of public procurements, it could be expected for both above-average prices to have been attained in procurement procedures where planned electronic auctions did not take place on the grounds of having received one bid each, which prevented organization of the planned auction for downward bidding.

This index also observed great market domination on the part of one company. Namely, 7 from the total of 10 contracts for procurement of interactive boards were awarded to economic operator *Davka* from Shtip, while other 3 contracts were awarded to *Zotebros* from Skopje (2 contracts) and *PC Control Hardware* from Strumica (1 contract).

2.2.

Index of Rationality for Pellets

The index of rationality for Pellets is developed for two categories of pellets according to their heating capacity.

The first index covers pellets with heating capacity of minimum 4.6 kwh/kg, pellet length of minimum 3.15 mm and maximum 40 mm, diameter of 5 to 9 mm, average density of 600 kg/m³, maximum ash content of 0.7% and maximum moisture content of 10%.

The second index concerns pellets with heating capacity of 4.9 to 5.3 kwh/kg, pellet length of minimum 3.15 mm to maximum 40 mm (only PS "Goce Delchev" from Bosilovo has minimum 20mm +/-5mm), diameter of 6 mm or 8 mm with deviation +/- 1 mm, moisture content of 6% (except for the Municipality of Kriva Palanka - 10%) and average density of 650 kg/m³.

The selection of tender procedures for pellets was made on the basis of procurement notices announced in the last quarter of 2021. Among total of 21 tender procedures, comparability was established for 13 tender procedures that were later divided into two groups, depending on their respective heating capacity, in order to ensure more adequate comparisons.

2.2.1.

Index of Rationality for Pellets with Heating Capacity of Minimum 4.6 kwh/kg

Pellets with heating capacity of minimum 4.6 kwh/kg were purchased at prices in the range from 15,842 MKD to 21,000 MKD. In addition to identical heating capacity of 4.6 kwh/kg, other matching characteristics included pellet length of 3.15 to 40 mm, diameter of 5 to 9 mm, average density of 600 kg/m³, maximum ash content of 0.7% and maximum moisture content of 10%.

The ratio between the lowest and the highest price attained for procurement of this type of pellets accounts for high 1:1.36, which means that the highest price paid by primary school "Dimkata Angelov – Gaberov" from village Vataša is by 36% higher than the price paid by the kindergarten "25 MAY" from Skopje. Significant differences in price cannot be justified with the type of procurement procedures organized or the level of competition in procurement procedures, or even the quantity purchased. All this is indicative of subjective factors that have played a major role in these procurements.

Index of Rationality for Pellets with Heating Capacity of 4.6 kwh/kg
(price per 1 ton of pellets)

Contracting authority	Heating capacity	Price in MKD (VAT included)	Difference against the average
PI kindergarten "25 MAY", Skopje	≥ 4.6 kwh/kg	15,842	-23.8%
PS "Marko Cepenkov", Skopje	≥ 4.6 kwh/kg	17,850	-9.9%
Average		19,610	0%
Municipality of Chaska	≥ 4.6 kwh/kg	20,000	+2.0%
PHI Center for Public Health – Tetovo	≥ 4.6 kwh/kg	20,790	+5.7%
PS "Krste Misirkov", Skopje	≥ 4.6 kwh/kg	20,790	+5.7%
Employment Service Agency of RNM	≥ 4.6 kwh/kg	21,000	+6.6%
MPS "Dimkata Angelov – Gaberot", v. Vatasha	≥ 4.6 kwh/kg	21,000	+6.6%

*Average is calculated from prices paid by institutions included in the index for this procurement.

As evident from data shown in the table above, the average price at which institutions bought pellets with minimum heating capacity of 4.6 kwh/kg is calculated at 19,610 MKD per ton. In that, two contracting authorities purchased them at lower prices, and five contracting authorities obtained above-average prices. The lowest price of 15,842 MKD per 1 ton of pellets is by 23.8% lower than the average, while the highest price is by 6.6% higher than the average.

All procurements were organized under procedures anticipated under the Law on Public Procurements whereby, according to the procurement's value, a total of six contracting authorities organized so-called small-value procurements, and only the Employment Service Agency of RNM organized a simplified open procedure. All procurement procedures used "lowest price" as the selection criterion. As regards e-auctions, they were planned by six contracting authorities, with the exception of

MPS “Dimkata Angelov – Gaberot” from village Vatasha. All procurement procedures were marked by competition in the range from two to four bids each. Based on above elaborated, there is no logical justification for differences in price attained. In that, prices attained cannot be correlated to the quantity purchased. The absence of such correlation is best represented by the fact that the Employment Service Agency of RNM has purchased the biggest quantity (88 tons of pellets), but its price falls in the range of above-average prices, while the institution that paid the highest price (MSP “Dimkata Angelov – Gaberot”, v. Vatasha) did not purchase the smallest quantity.

Purchased quantity of pellets

Contracting authority	Quantity (in tons)	Difference of individual price against the average
PI kindergarten “25 MAY”, Skopje	12.6	-23.8%
PS “Marko Cepenkov”, Skopje	34	-9.9%
Municipality of Chashka	6	+2.0%
PHI Center for Public Health – Tetovo	5	+5.7%
PS “Krstel Misirkov”, Skopje	4.5	+5.7%
Employment Service Agency of RNM	88	+6.6%
MPS “Dimkata Angelov – Gaberot”, v. Vatasha	23	+6.6%

*Quantities are established on the basis of relevant tender documents.

2.2.2

Index of Rationality for Pellets with Heating Capacity of 4.9 to 5.3 kwh/kg

The price paid for pellets with higher heating capacity, i.e. from 4.9 to 5.3 kwh/kg, ranges from 18,375 MKD to 25,960 MKD. The ratio between the lowest and the highest price is 1:1.41, which means that the highest price paid by primary school "Goce Delchev" from Bosilovo is by 41% higher than the price paid by the Municipality of Kriva Palanka. The reasons behind this major difference might be identified in the fact that PS "Goce Delchev" is the only contracting authority whose tender documents enlisted the length of pellets at minimum 20mm +/- 5mm, unlike other institutions which purchased pellets in length of minimum 3.15 mm to maximum 40 mm. Hence, PS "Goce Delchev" was presented with only bid. The difference in heating capacity could not justify differences in price paid, as shown in the table for this index of rationality, which shows that pellets with heating capacity of 5.3 kwh/kg were purchased at prices that are either higher or lower than the average.

Index of Rationality for Pellets with Heating Capacity of 4.9 to 5.3 kwh/kg
(price per 1 ton of pellets)

Contracting authority	Heating capacity	Price in MKD (VAT included)	Difference against the average
Municipality of Kriva Palanka	5.0 kwh/kg	18,375	-15.7%
Municipality of Kumanovo, MPS "Brakja Miladinovci" and MPS "Krste Misirkov" ¹	5.3 kwh/kg	18,900	-12.5%
Municipality of Dolneni	4.9 kwh/kg	21,000	-1.2%
Average		21,257	0%
PS "Denche Dejanovski", village Mavrovi Anovi	4.9 kwh/kg	22,050	+3.6%
PS "Goce Delchev", Bosilovo	5.3 kwh/kg	25,960	+18.1%

*Average is calculated from prices paid by institutions included in the index for this procurement.

As shown in the table, the average price calculated for procurement of this type of pellets accounts for 21,257 MKD. Three institutions have purchased pellets at prices below the average, and two institutions purchased them at above-average prices. These differences cannot be justified with the type of procurement procedures organized. All contracting authorities covered in this index have organized so-called small-value procurements, with the exception of the Municipality of Kriva Palanka which, on the account of the procurement's high value, organized a simplified open procedure. All procurement procedures used "lowest price" as the selection criterion and anticipated organization of electronic auction.

As regards the quantity purchased, prices are proportionally increased to decreasing quantities, but the question remains whether the primary school "Goce Delchev" from Bosilovo attained the highest price because it limited competition by means of its technical specifications and not on the account of the quantity purchased. As shown

¹ Group procurement.

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in the table below, the Municipality of Dolneni attained a below-average price and purchased 15 tons of pellets, i.e. only 3 tons more than the primary school from Bosilovo.

Purchased quantity of pellets

Contracting authority	Quantity (in tons)	Difference of individual price against the average
Municipality of Kriva Palanka	40	-15.8%
Municipality of Kumanovo	20	-12.7%
Municipality of Dolneni	15	-1.4%
PS "Denche Dejanovski", village Mavrovi Anovi	11	+3.6%
PS "Goce Delchev", Bosilovo	12	+18.1 %

*Quantities are established on the basis of relevant tender documents.

While one company dominates these procurements in terms of contracts awarded, 4 companies appear as holders of procurement contracts in tender procedures covered by this index of rationality. Seven from 12 contracts were awarded to *Filadelfija* from Kochani, 3 contracts were awarded to *Dimbo* from Pehchevo and one contract each was awarded to *ABC Dojchinovski Jovan and others* from Bitola and *Eco Life* from Skopje. Having in mind the number of bids submitted and contracts signed, it could be concluded that these procurement procedures were marked by stronger competition than the usual one on the market of public procurements in the Republic of North Macedonia.

2.3.

Index of Rationality for Print Paper

Print paper of A4 format, white and weighting 80 g/m² was procured at prices in the range from 136 MKD to 279 MKD per ream of 500 pieces.

The ratio between the lowest and the highest price for print paper is 1:2.05, which means that the highest price is twice as higher as the lowest price. The highest price per ream of print paper was paid by the Scientific Institute for Tobacco – Prilep at the University “St. Clement of Ohrid” in Bitola (279 MKD), while the lowest price was paid by the Municipality of Bosilovo (136 MKD).

Major differences in price cannot be explained with technical specifications for print paper, having in mind that both contracting authorities that attained the lowest and the highest price have requested print paper of A4 format, weighing 80 g/m² and white in colour. Furthermore, both institutions (Municipality of Bosilovo and the Scientific Institute for Tobacco – Prilep) organized small-value procurements and used “lowest price” as the selection criterion, followed by organization of electronic auction.

Nevertheless, portion of institutions covered under this index (Mol, Parliament and JSC Power Plants) enlisted additional parameters in their technical specifications related to paper thickness, whiteness, non-opaque quality, clarity and resilience to usual tear-and-wear of minimum 150 years, which was subject of demonstration on the part of bidding companies in the form of specific quality standards. In spite of detailed technical description of print paper, these institutions are also included in the index of rationality because its purpose is to open dilemmas whether detailed technical specifications that have led to higher prices are justified or not.

Index of Rationality for Print Paper
(price per 1 ream of paper)

Contracting authority	Type of print paper	Price in MKD (VAT included)	Difference against the average
Municipality of Bosilovo	A4 format, white, 80 g/m2	136	-43.4%
Ministry of Defence – Sector for Logistical Matters	A4 format, white, 80 g/m2	146	-33.6%
PHI University Clinic of Neurology	A4 format, white, 80 g/m2	150	-30.0%
Center for Vocational Education and Training	A4 format, white, 80 g/m2	166	-17.5%
PHI University Dental Clinical Center "St. Panteleimon" – Skopje	A4 format, white, 80 g/m2	175	-11.4%
Municipality of Negotino	A4 format, white, 80 g/m2	177	-10.2%
Municipality of Bitola	A4 format, white, 80 g/m2	188	-3.7%
Average		195	0%
JSC Power Plants of North Macedonia	A4 format, white, 80 g/m2	199	+2.0%
Ministry of Interior	A4 format, white, 80 g/m2	201	+3.0%
Parliament of RNM	A4 format, white, 80 g/m2	203	+3.9%
Public Enterprise for State Roads	A4 format, white, 80 g/m2	212	+8.0%
Ministry of Agriculture, Forestry and Water Economy	A4 format, white, 80 g/m2	227	+14.1%
Constitutional Court of RNM	A4 format, white, 80 g/m2	274	+28.8%
Scientific Institute for Tobacco – Prilep, University "St. Clement of Ohrid – Bitola	A4 format, white, 80 g/m2	279	+30.1%

*Average is calculated from prices paid by institutions include in the index for this procurement.

As regards development of this index of rationality, the subject of analysis were all tender procedures for procurement of print paper/copy paper organized in the second half of 2021. In that, from analysis of 24 tender procedures, only 14 were selected to be included in the index as they concerned procurement of the same type of paper (A4 format, white and 80 grams). While some institutions, such as Mol, the Parliament and JSC Power Plants, had more detailed descriptions, they are still included in the index because the paper purchased served the same needs, and the index itself is aimed at opening issues about rationality in public spending in the broadest sense.

As shown in the table above, seven contracting authorities purchased paper at prices lower than the average price calculated at 195 MKD per ream of paper, while other seven contracting authorities paid above-average prices.

Analysed in terms of the type of procurement procedures organized for print paper, it could be concluded that all tender procedures were implemented in compliance with the Law on Public Procurements (small-value procurements, simplified open procedures and open procedures). Dominant share of institutions used "lowest price" as the selection criterion and anticipated organization of electronic auction. All tender procedures were presented with two to ten bids each.

Analysed in terms of quantity purchased, as shown in the table below, differences in price cannot be correlated to quantity purchased. Notably, Mol purchased the highest quantity (80,000 reams of paper) and although it had higher requirements in respect to paper quality, still belongs to the group of institutions that attained above-average prices.

Purchased quantity of print paper

Contracting authority	Number of purchased reams of paper	Difference of individual price against the average
Municipality of Bosilovo	300	-43.4%
Ministry of Defence – Sector for Logistical Matters	513	-33.6%
PHI University Clinic of Neurology	100	-30.0%
Center for Vocational Education and Training	300	-17.5%
PHI University Dental Clinical Center "St. Panteleimon" – Skopje	1.000	-11.4%
Municipality of Negotino	800	-10.2%
Municipality of Bitola	385	-3.7%
JSC Power Plants of North Macedonia	3,000	+2.0%
Ministry of Interior	80,000	+3.0%
Parliament of RNM	12,400	+3.9%
Public Enterprise for State Roads	5,000	+8.0%
Ministry of Agriculture, Forestry and Water Economy	5,000	+14.1%
Constitutional Court of RNM	130	+28.8%
Scientific Institute for Tobacco – Prilep, University "St. Clement of Ohrid" in Bitola	200	+30.1%

*Quantities are established on the basis of relevant tender documents.



GENERAL CONCLUSION

This issue of the Index of Rationality was developed for school interactive boards with dimensions 1650x1250 millimetres, pellets with two types of heating capacity, i.e. minimum capacity of 4.6 kwh/kg and heating capacity of 4.9 to 5.3 kwh/kg, and for print paper of A4 format, white and weighting 80 grams.

The biggest difference in prices is observed in respect to procurement of print paper, and the smallest difference is observed in the case of interactive boards.

In summary, this index of rationality provides the following conclusions:

- **interactive boards** were procured by schools at prices in the range from 31,219 MKD to 39,894 MKD, whereby the highest price is by 28% higher than the lowest;
- **pellets with heating capacity of minimum 4.6 kwh/kg** were purchased at prices in the range from 15,842 MKD to 21,000 MKD per 1 ton of pellets, whereby the highest price is by 36% higher than the lowest;
- **pellets with higher heating capacity, i.e. from 4.9 to 5.3 kwh/kg** range from 18,375 MKD to 25,960 MKD, whereby the highest price is by 41% higher than the lowest;
- **print paper** (A4 format, white and 80 grams) was purchased at prices in the range from 136 MKD to 279 MKD per ream of paper, whereby the highest price is twice as high as the lowest.

Reasons behind differences in price for all procurement subjects are not related to the type of procurement procedures organized. Namely, contracting authorities relied on law-stipulated procedures with dominant use of “lowest price” as criterion for selection of the most favourable bid, including electronic auction for reducing initial offers by companies. In most cases, different prices are not a result of the quantity purchased. What affects prices is competition and evident is that higher prices were attained in tender procedures without competition. At the same time, absence of clear reasons for established differences in price raises concerns about subjective influences on the market of public procurements. As it can be expected, tender procedures whose technical specifications did not engage in too detailed descriptions or have not defined limiting parameters of procurement subjects resulted in attainment of higher prices. This imposes the need for contracting authorities to engage in thorough market research and avoid using technical specifications that limit competition.

At the same time, contracting authorities should view the index of rationality as useful instrument that could help them improve their performance, in particular because it undoubtedly indicates to the fact that the market of public procurements in the country still does not guarantee rational and cost-effective public spending and there is a series of challenges that need to be addressed in that regard.