TRANSPARENCY AND ACCOUNTABILITY IN THE PUBLIC BUDGET, EMPIRICAL STUDY (DATA ANALYSIS) IN LOCAL GOVERNMENTS- MUNICIPALITIES

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ABSTRACT

This scientific paper aims to measure fiscal transparency during the budget process, from planning to execution in the local governments, respectively in Municipalities of Kosovo. The budget is a key document that presents the government's priorities in policy and program implementation, fair resource allocation, and efficient and equitable management of public funds through transparent budget systems that are monitored by independent institutions. The transparent budget provides citizens with access to information, which can provide feedback about revenue, allocations, and government spending. If the budget is not transparent, accessible and accurate, can't be properly analyzed, can't be fully monitored, the results are not evaluated .All of these can become a cause for corruption. In order to analyze closely the transparency and accountability of local governments during the budget process, this research is based on a survey conducted according Likert scales, by making empirical research or data analysis through econometric tests and models (which will be explained below), to verifying the hypotheses how transparent are municipalities during the budget process, and how much has been the increased accountability financial. The findings from this research will help state of the Kosovo how much has fiscal transparence and financial accountability are in local governments, also this paper will be help other researchers to carry out research in their country.

Key words: Public budget, budget transparency, local governments, public accounting, financial reporting, econometric and statistical models, financial accountability etc.

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I. INTRUDUCTION

The importance of finances and public accounting, with particular emphasis on the public budget as an important and specific area, every day more is becoming necessary to increase budget transparency and financial accountability, both parameters that measure performance during governance and, economic stability of the country. The state budget as the main state document should be based on estimates of fiscal situations, and should not be necessary to be reviewed (re-approved) during the year of its implementation. So the budget is partially political, partially economic, partly account, partly administrative. As a political document, it shares the scarce resources of a society between numerous conflicting and competitive interests. If we look from the prism of an economic and fiscal document, the budget serve as a primary instrument for assessing the redistribution of income in legally form, promoting its growth and development, combating inflation, promoting full employment, and maintaining economic stability. From an accounting point of view, the budget provides a limit on government expenditures, in keeping the budget ceilings approved by the government, and recently the budget as a management and administrative document defines the ways and means by which public services are provided and the criteria by which they are monitored, measured and evaluated.

II. PURPOSE OF RESEARCH

The purpose of this research is to see whether local governments are transparent during the budget process, which municipalities has accountability more accurately, and which are transparent during publication of budget documents.

Another important goal in this research is to examine the relationship between the variables, which affect more on transparency and financial accountability. Taking into consideration, than with transparent are local governments, those are more open to people and other institutions for the method how are collected and used public money.

III. METHODOLOGY

Empirical study or analysis of data is done in local governments - Kosovo Municipalities, to see how transparent they are during the budget process. This research was done through the questionnaire according to Likert's scale, processing data through econometric and statistical models with SPSS and R program.

The tests and methods that are used are:

- 1. Responding of municipalities according to Likert scale in percentage
- 2. Correlation analysis by Pearson coefficient and multiple regression
- 3. Pearson's Correlation Coefficient for two variables
- 4. Degree of freedom
- 5. Skewness test
- 6. Kurtosis test
- 7. Descriptive Statistics for budget transparence (mean, variance, Mode, Standard Deviation, median, range)
- 8. Crnobach's Alpha
- 9. Municipal ranking according to Budget Transparency Index

IV. THE HYPOTHESES

H0: There is an important relation between Municipalities and others?

Auxiliary hypotheses H0₁: The willingness of the Municipalities to cooperate with others increases transparency and accountability?

H1: There is a correlation between variables?

Auxiliary hypotheses H1₁. The budget experts has relationship with budget transparency?

H2: Descriptive statistics has strong links to budget variables to show the transparency of municipalities?

H3: There is a relation between the overall transparency and budget rankings of Municipalities?

V. LITERATURE REVIEW

5.1. BUDGET THEORIES

A good budget is characterized by: transparency, integrity, openness, participation, accountability and strategic approach to planning and achievement of the country's objectives. During increasing the interest for public budget by budget policy makers at the central and local level, or even by the citizens of the country there was need we have it knowledge about the theories from the budget contributors, which will help us to deal with the problems and reduce them, enabling us to have the best results during budget implementation as the main tool for economic management and financial stability.

For budget has been spoken since the times of human existence so far. At each stage of the creation, the importance and the role of the budget and public money has affected financial reform or growth or decline in economic development. About the transparency and financial and budgetary accountability have contributed many theorists or economists. In the early stages of development, the budget was closely linked to the preparation and presentation of credible information to legitimize accountability or transparency and to allow accurate estimation of the central and local governments, taking into account the remuneration for the success achieved.³ About handling issues of public budgeting by providing a microeconomic solution to budget transparency, which will increased the allocation efficiency for government. His theory was based on the same principles that led other economist's years to find ways to improve the welfare of society in general, and not just the party in power.⁴ In 1920, the budget is presented as a costs management tool, and cash flows in central and local governments.⁵ However, the appearance of scientific management philosophy paid great importance to the information as an important basis for making decisions, leading to an extraordinary development of accounting and budgeting techniques.⁶ The efforts of the current economists for budgeting, were not different from those of previous economists.⁷

The budget is more than just distributing the small resources between x and y, this is about meeting the contradictory needs of a society, bringing compromises in the political market through adaptions additional on budget allocation.⁸ The budget is the behavior of a bureaucratic measure and of administrative powers.⁹ Some argue that it is not necessary to have only one theory of budgeting but more theory, where each of them will trying to address budget problems.¹⁰ However, the budget function and focus has shifted considerably, distribution and organization has become more complex and their environment is highly dynamic. In their voluminous and complex formats, the budgets at the same time mark the results of budget policies, mark the priorities and goals of the programs,

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¹Budget Transparency Toolkit, Practical steps for supporting openness, integrity and accountability in public financial management. Developed by OECD with the participation of the Global Initiative for Fiscal Transparency (GIFT) Network.

² Budget transparency, best practices OECD.

³ Hindereth, 2002, budget transparency.

⁴ V.O.Key (1940), budget transparency.

⁵ Bartle 2001

⁶ Bartle 2008, theory for public budget.

⁷ A.Smithies 1955, theory for public budget.

⁸ Wildavsky 1961, theory for public budget.

⁹ Mosher, 1954.

¹⁰ Schik, 1988.

determine the overall efforts of governments to perform services, measure performance and budget transparency, measure effectiveness and overall efficiency.¹¹ The budget is a document that contains a previously plan approved for public incomes and expenditures.¹² A budget is simultaneously a report on ratings and proposals, is instrument with which all the financial management processes are interconnected and coordinated.¹³ The classic issue of 1940 on the lack of a budget theory, found a neglected part of the "progressive expenditure theory".¹⁴ Budget Interpretation is back to the overarching core principles based on the "Super Budget" proposal as a way to determine new budget packages by providing control over their goal.

A regulated budget fits this model, by examining budget control criteria including not only factors economic, political, but also human factors. ¹⁵ Beginning of wisdom of the central and local institutions' is the budget review as a whole for each year, because almost never not reviewed. Instead, they are based on last year's budget by making any change for small range increasing or decreasing. ¹⁶ The government's role involves public spending in order to maximize social welfare. Various efforts have been made to test whether these government expenditures contribute to the pace of economic growth. ¹⁷

5.2. WHAT IS BUDGET TRANSPARENCY?

Transparent budgets and public financial management processes constitute a key pillar of good governance. ¹⁸The relationship between good governance and better economic and social outcomes is increasingly acknowledged. Transparency – openness about policy intentions, formulation and implementation – is a key element of good governance. The budget is the single most important policy document of governments, where policy objectives are reconciled and implemented in concrete terms. Budget transparency is defined as the full disclosure of all relevant fiscal information in a timely and systematic manner. ¹⁹ Budget transparency refers to the extent and ease with which citizens can access information about and provide feedback on government revenues, allocations, and expenditures. Budgets are key documents reflecting how scarce resources are allocated across competing demands. ²⁰

5.3. BUDGET REPORTS FOR TRANSPARENCY AND FINANCIAL ACCOUNTABILITY

Budget reports include:²¹

- **The budget** is the government's key policy document. It should be comprehensive, encompassing all government revenue and expenditure, so that the necessary trade-offs between different policy options can be assessed.
- A pre-budget report serves to encourage debate on the budget aggregates and how they interact with the economy. As such, it also serves to create appropriate expectations for the budget itself. It should be released no later than one month prior to the introduction of the budget proposal.
- **Monthly reports** show progress in implementing the budget. They should be released within four weeks of the end of each month.

¹² Rene Stourm.

¹¹ Hyde, 1992.

¹³ Charles F. Bastable.

¹⁴ The classic issue for budgeting, 1940.

¹⁵ Gerald J.Miller.

¹⁶ A. Wildavsky 1964

¹⁷ Meltzer and Richard (1981), Persson & Tabellini (1990).

¹⁸ Budget Transparency Initiative, World Bank document.

¹⁹ OECD Best Practices for Budget Transparency, France, 2002.

²⁰ Budget theory and budget practice, How Good and Fit?, Irene S.Rubin

²¹ Ibid.

- The mid-year report provides a comprehensive update on the implementation of the budget, including an updated forecast of the budget outcome for the current fiscal year and, at least, the following two fiscal years. The report should be released within six weeks of the end of the mid-year period.
- The year-end report is the government's key accountability document. It should be audited by the Supreme Audit Institution, and be released within six months of the end of the fiscal year.

5.4. BENEFITS AND EFFECTS OF BUDGET TRANSPARENCY

Benefits of budget transparency and financial accountability are:

- Accountability Clarity about the use of public funds is necessary so that public representatives and
 officials can be accountable for effectiveness and efficiency.
- Integrity- Public spending is vulnerable not only to waste and misuse, but also to fraud. "Sunlight is the
 best policy" for preventing corruption and maintaining high standards of integrity in the use of public
 funds.
- Inclusiveness Budget decisions can profoundly affect the interests and living standards of different people and groups in society; transparency involves an informed and inclusive debate about the budget policy impacts.
- Trust- An open and transparent budget process fosters trust in society that people's views and interests are respected and that public money is used well.
- Quality Transparent and inclusive budgeting supports better fiscal outcomes and more responsive, impactful and equitable public policies.²²

5.5. WHAT IS THE BUDGETARY GOVERNANCE

Budgetary governance is the process of formulating the annual budget, overseeing its implementation and ensuring its alignment with public goals.²³

5.6. ACCOUNTABILITY AND RESPONSIBLITY

Accounting policies²⁴ - A summary of relevant accounting policies should accompany all reports. These should describe the basis of accounting applied (e.g. cash, accrual) in preparing the reports and disclose any deviations from generally accepted accounting practices.²⁵

Systems and responsibility - A dynamic system of internal financial controls, including internal audit, should be in place to assure the integrity of information provided in the reports.²⁶

Audit - The year-end report should be audited by the Supreme Audit Institution in accordance with generally accepted auditing practices.²⁷

5.7. BUDGET TRANSPARENCY AND FINANCIAL ACCOUNTABILITY AT THE LOCAL LEVEL - MUNICIPALITIES

Transparency for budget and financial accountability empowers people to scrutinize the adequacy of the allocation of public resources across different priorities as well as the probity of spending, thus reducing inefficiencies and corruption.²⁸ Transparent budget processes serve to build trust between citizens and the government at center and local level. Budgetary institutions at the local level serve to allocate community resources consistent with community preferences. The role and budget documents of these institutions have changed significantly in the past two decades. Local budgets have evolved from instruments of planning and financial control to tools of performance measurement,

²² Budget transparency, OECD.

²³ Budget transparency, OECD.

²⁴ OECD Best Practices for Budget Transparency.

²⁵ Ibid.

²⁶ Ibid.pg.13.

²⁷ Ibid.pg.15.

²⁸ World Bank document for local budgeting.

results management, and fiscal discipline. Local budgets now also serve to enhance citizen empowerment and resultsbased external accountability in the public sector. ²⁹ Local governments must contend with many exogenous factors that affect their fiscal health. As a subpart of a larger fiscal and monetary entity, local governments are highly vulnerable to national shocks, they are often heavily dependent on sometimes unpredictable fiscal transfers from other levels of government, and they may labor under highly rigid expenditure mandates. However, local governments' perverse fiscal behavior can adversely affect national fiscal and monetary conditions.³⁰

VI. EMPIRICAL STUDY (DATA ANALYSIS) IN LOCAL GOVERNMENTS - MUNICIPALITIES

This paper combines statistical analysis, tests and econometric models during the research of budget transparency and financial accountability at the local governances - Municipalities. The purpose of these analyzes is to confirm the data, through the hypotheses raised, and from the questionnaire realized with the budget analysts in Kosovo Municipalities. Since the data of this research originated from a Likert Scale Questionnaire ranging from 1-5. Depending on the hypotheses raised will be used tests and analyzes through the SPSS and R program.

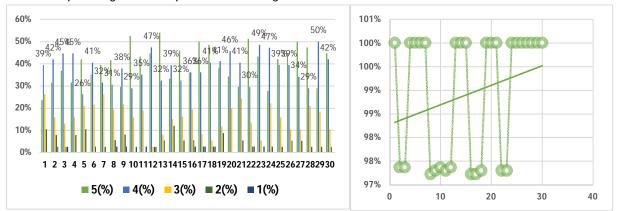
6.1. RESPONDING OF MUNICIPALITIES ACCORDING TO LIKERT SCALE³¹

VARIABLES/QUESTIONS	MUNICIPALITIES	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL
Q1	38	5(%) 24%	4(%) 39%	3(%) 26%	2 (%) 11%	1(%) 0%	100%
Q2	38	32%	42%	16%	8%	3%	97%
Q3	38	37%	45%	13%	3%	3%	97%
Q4	38	32%	45%	16%	8%	0%	100%
Q5	38	42%	26%	21%	11%	0%	100%
Q6	37	35%	41%	22%	3%	0%	100%
Q7	38	39%	32%	26%	3%	0%	100%
Q8	36	42%	31%	19%	6%	3%	97%
Q9	37	30%	38%	22%	8%	3%	97%
Q10	38	53%	29%	16%	0%	3%	97%
P11	37	43%	35%	19%	0%	3%	97%
Q12	38	45%	47%	3%	3%	3%	97%
Q13	37	54%	32%	8%	5%	0%	100%
Q14	33	33%	39%	15%	12%	0%	100%
Q15	37	46%	32%	16%	5%	0%	100%
Q16	36	36%	36%	19%	6%	3%	97%
Q17	36	50%	36%	8%	3%	3%	97%
Q18	37	49%	41%	5%	3%	3%	97%
Q19	34	38%	41%	12%	9%	0%	100%
Q20	35	34%	46%	20%	0%	0%	100%
Q21	37	30%	41%	24%	5%	0%	100%
Q22	37	51%	30%	14%	3%	3%	97%
Q23	37	43%	49%	5%	0%	3%	97%
Q24	36	28%	47%	22%	3%	0%	100%
Q25	38	42%	39%	16%	3%	0%	100%

²⁹ Local budgeting, Anwar Shah, the World Bank Washington, D.C.pg.15. ³⁰ Local budgeting, Anwar Shah, the World Bank Washington, D.C.pg.127. ³¹ Source: Author survey.

Q26	38	45%	39%	11%	5%	0%	100%
Q27	38	50%	34%	11%	5%	0%	100%
Q28	38	47%	29%	21%	3%	0%	100%
Q29	38	29%	50%	18%	3%	0%	100%
Q30	38	45%	42%	11%	3%	0%	100%

Tab.1. Responding of municipalities according to Likert scale³²



Graph.1. Responding of municipalities according to Likert scale³³

Graph.2. Responding of Municipalities in total³⁴

6.2. CORRELATION ANALYSIS BY PEARSON COEFFICIENT AND MULTIPLE REGRESSION 35

$$P_{x,y} = cov^{36}(x,y)/\delta^{37}x\delta y$$
 1)
 $P_{x,y} = E^{38}[(x-\mu^{39}x)(y-\mu_y^{40})]/\delta x\delta y$ 2)

34 Source : Author

³² Based on Table No.1 we can see the calculation the % of municipalities that answered according Likert scale. From total 38 of municipalities, for either question have given an answer based on the respective documentation. In the Strongly Agree column, answer to the higher in % is O13 or about 54% from 37 municipalities that answered (O13 -Comprehensive annual financial plan for revenues and expenditures it is available to the public). While in the same column, the answer with the lowest % is Q1 or about 24% from 38 municipalities that answered (To carry out effective analysis when preparing the budget plan, Municipality has an adequate number of professionals (budget experts). In the Agree column, answers to the higher in % are Q29 and Q30 or about 50% and 40% from 38 municipalities that answered (Q29-Q30 Budget circulars, the time limit for budget publication (budget reports), are transparent for citizens and other bodies for each year) In the Neutral column, answers to the higher in % are Q1 and Q7 or about 26%, while in the same column, the answer with the lowest % is Q11 or about 3%. In the Disagree column, answer to the higher in % is Q14 or about 12% from 33 municipalities that answered ((Long-term planning for total revenues and expenditures (10 years or more) is available to the public).
33 Source: Author survey. Graph from program R and SPSS

³⁵ Pearson's coefficient is the measurement of correlation and ranges (depending on the correlation) between +1 and -1. +1 indicates the strongest positive correlation possible, and -1 indicates the strongest negative correlation possible. Therefore the closer the coefficient to either of these numbers the stronger the correlation of the data it represents. On this scale 0 indicates no correlation, hence values closer to zero highlight weaker/poorer correlation than those closer to +1/-1.

³⁶ In probability theory and statistics, covariance is a measure of the joint variability of two random variables. If the greater values of one variable mainly correspond with the greater values of the other variable, and the same holds for the lesser values, (i.e., the variables tend to show similar behavior), the covariance is positive. In the opposite case, when the greater values of one variable mainly correspond to the lesser values of the other, (i.e., the variables tend to show opposite behavior), the covariance is negative.

 $^{^{37}}$ In statistics, the standard deviation (SD, also represented by sigma σ is a measure that is used to quantify the amount of variation or dispersion of a set of data values. A low standard deviation indicates that the data points tend to be close to the mean (also called the expected value) of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values.

³⁸ In probability theory, the expected value of a random variable, intuitively, is the long-run average value of repetitions of the same experiment it represents

$$r_{x,y} = \sum_{i=1}^{n} (xi - x)(yi - y) / \sqrt{\sum_{i=1}^{n} (xi - x)^{2}} \sqrt{\sum_{i=1}^{n} (xi - y)^{2}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}} \sqrt{\sum_{i=1}^{n} (xi - x)^{2}}} \sqrt{\sum_{i=$$

VARIABLES	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
P1	1		l			l	l	I	I	I	I	l			
P2	0.2883	1													
P3	0.3088	0.2948	1												
P4	0.1911	0.2053	0.4873	1											
P5	0.3034	0.2794	0.4783	0.433	1										
P6	0.1728	0.1418	0.4623	0.4511	0.5821	1									
P7	-0.041	0.1568	0.255	0.2043	0.4127	0.5647	1								
P8	0.3000	0.2643	0.4672	0.3579	0.6781	0.5975	0.3623	1							
P9	0.1548	0.2442	0.1872	0.2033	0.483	0.4778	0.2235	0.78	1						
P10	0.3589	0.4234	0.5629	0.3237	0.5326	0.402	0.3349	0.7266	0.5328	1					
P11	0.4218	0.3705	0.4698	0.3389	0.4073	0.4595	0.3520	0.4062	0.2866	0.5898	1				
P12	0.4830	0.4528	0.5008	0.5193	0.4497	0.5074	0.3582	0.5748	0.3254	0.5989	0.5284	1			
P13	0.1222	0.3141	0.3138	0.4102	0.2768	0.535	0.3245	0.5457	0.4711	0.4689	0.3325	0.6138	1		
P14	0.3571	0.2306	0.2981	0.063	0.4153	0.5118	0.2857	0.4352	0.4687	0.4477	0.4471	0.2597	0.3424	1	
P15	0.1828	0.1425	0.3784	0.4839	0.2114	0.2 <mark>7</mark> 99	0.0833	0.4105	0.2684	0.5942	0.4899	0.3551	0.4734	0.1981	1

⁴²Tab.2. Correlation analysis and multiple regression⁴³

Explanation: Based on Table 2 of the correlation analysis for variables Q1-Q15. In this table we see that variables that approximate +1 value have strong linear links, variables that approximate value -1 have strong linear but negative correlations, while variables close to 0 have strong or weak linear links depending on the signs (+/-).

The variable that has a strong linear relation or is significant is Q1 with Q12, because if the municipalities have adequate numbers of budget experts, then the budget proposal is available to the public because the experts are ready to provide demonstrated evidence about how budget planning is done. The variable that has a strong linear relation or is significant is Q8 with Q5 (Citizens to a certain extent participate in budget planning and in its approval, starting from the public consultation procedure, and other ways that ensure a transparent participation). The variable that has a strong linear relation but negative is Q1 with Q07, if the municipality does not have a sufficient number of budget experts, it can get from outside during budget planning to ensure: integrity, transparency, impartiality, and financial management competition between municipalities. In this form, it becomes elaboration of all connections between variables is based on the explanation (+1, -1, +1 / -1).

³⁹ In probability and statistics, the population mean, or expected value, are a measure of the central tendency either of a probability distribution or of the random variable characterized by that distribution. In the case of a discrete probability distribution of a random variable X, the mean is equal to the sum over every possible value weighted by the probability of that value; that is, it is computed by taking the product of each possible value x of X and its probability p(x), and then adding all these products together, giving $\mu = \Sigma xp(x)$ ⁴⁰ Ibid.

Where: n – is sample size, xi, yi are the individual sample points indexed with, x =1/n ($\sum_{i=1}^{n} x_i$), (the sample mean and analogously for y.

⁴² Source: Author, Econometric models CA.

⁴³ Correlation for 1-15 variables for budget transparence



Graph.2.Correlation for 1-15Q44

Graph.3.Correlation for Q16-30⁴⁵

VARIABLES	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
P16	1			1	ı	ı			1					ı	
P17	0.3771	1													
P18	0.2214	0.7688	1												
P19	0.5391	0.3978	0.4256	1											
P20	0.4417	0.1694	0.1114	0.536	1										
P21	0.3153	0.6288	0.5763	0.5668	0.3808	1									
P22	0.2030	0.6279	0.6629	0.3987	0.3543	0.6896	1								
P23	0.1460	0.6237	0.7052	0.4083	0.2708	0.6062	0.6724	1							
P24	0.4558	0.2658	-0.039	0.4038	0.2831	0.2061	0	0.0885	1						
P25	0.6573	0.3333	0.2231	0.5084	0.5032	0.326	0.3239	0.3763	0.5335	1					
P26	0.4286	0.4815	0.4159	0.5514	0.4359	0.3115	0.2663	0.5456	0.3789	0.5127	1				
P27	0.1351	0.3868	0.352	0.3831	0.2587	0.3095	0.3104	0.5118	0.3298	0.3724	0.7094	1			
P28	0.2268	0.4815	0.6596	0.5039	0.2311	0.6255	0.7184	0.6992	0.1641	0.3931	0.5839	0.6658	1		
P29	0.4413	0.5753	0.5888	0.4749	0.4755	0.5811	0.5461	0.5694	0.4291	0.5452	0.4752	0.5033	0.6658	1	
P30	0.3701	0.3583	0.3985	0.5113	0.4047	0.4735	0.4616	0.5795	0.4212	0.5507	0.5946	0.6826	0.631	0.614	1

Tab.3. Correlation analysis and multiple regression for Q16-Q30 46

Explanation: Based on Table 2 of the correlation analysis for variables Q6-Q30. The variable that has a strong linear relation or is significant is Q16 with Q25 and Q19 (the municipalities transparently examines the requests by citizens for budget allocations such as investments, support etc., and information for citizens is easily acceptable). The variable that has a strong linear relation or is significant is Q30 with Q27 (Public spending and financial accountability is transparent for citizens and other bodies, because data is prepared in the form of monthly, six-month, nine-month, annual reports). Variable Q22 has no linear relation with Q24, because the Municipality does not specify budget rules, form and structure of the annual budget (organization, form of the document, types of information to be included from planning to implementation) are regulated by the Constitution and the law. The variable that has a strong linear relation but negative is Q24 with Q18, The call for public hearings is done in the official newspaper, municipal website, social networks, etc.).

⁴⁴ Author

⁴⁵ Author

⁴⁶ Correlation for 16-30 variables for budget transparence

www.ijern.com ISSN: 2411-5681

6.3. PEARSON'S CORRELATION COEFFICIENT FOR TWO VARIABLES

$$r = SV^{47} / \sqrt{SSxSSy} = 0.19888$$
 4)

$$r = \sum_{x=0}^{\infty} (X - X)(y - y) / \sqrt{\sum_{x=0}^{\infty} (X - X)^{2} (y - y)^{2}} = 0.1988885)$$

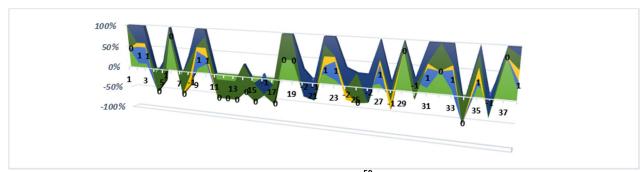
P1 (0)	Variable	Variable								
4 5 0.236842 1 0.236842 0.056094 1 20 16 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 5 -1.76316 1 -1.76316 3.108726 1 10 4 25 4 4 0.236842 0 0 0.56094 0 16 16 16 2 3 -1.76316 0 0 0.58241 0 12 9 16 4 5 0.236842 1 0.236842 0.56094 1 20 16 25 5 1.236842 1 1.236842 1.529778 1 25 25 25 25 25 25 25 25 25 25 25 25 25 25 25 <th>P1 (X)</th> <th>P4 (Y)</th> <th>x-Mean</th> <th>y-Mean</th> <th>SV</th> <th>SS_x</th> <th>SS_y</th> <th>XY</th> <th>X²</th> <th>γ²</th>	P1 (X)	P4 (Y)	x-Mean	y-Mean	SV	SS _x	SS _y	XY	X ²	γ²
4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 5 -1.76316 1 -1.76316 3.108726 1 10 4 25 4 4 0.236842 0 0 0.56094 0 16 16 16 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 3 -1.76316 -1 1.763158 3.108726 1 6 4 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9	5	4	1.236842	0	0	1.529778		20	25	16
3 4 -0.76316 0 0 0.58241 0 12 9 16 2 5 -1.76316 1 -1.76316 3.108726 1 10 4 25 4 4 0.236842 0 0 0.056094 0 16 16 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 3 -1.76316 -1 1.763158 3.108726 1 6 4 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9	4	5	0.236842	1		0.056094	1	20	16	25
2 5 -1.76316 1 -1.76316 3.108726 1 10 4 25 4 4 0.236842 0 0 0.056094 0 16 16 16 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 3 -1.76316 -1 1.763158 3.108726 1 6 4 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 5 5 1.236842 1 1.236842 1.529778 1 25<	4	5	0.236842	1	0.236842	0.056094	1	20		25
4 4 0.236842 0 0 0.056094 0 16 16 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 3 -1.76316 -1 1.763158 3.108726 1 6 4 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16	3	4	-0.76316	0	0	0.58241	0		9	16
3 4 -0.76316 0 0 0.58241 0 12 9 16 2 3 -1.76316 -1 1.763158 3.108726 1 6 4 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9	2	5	-1.76316	1	-1.76316	3.108726	1	10	4	25
2 3 -1.76316 -1 1.763158 3.108726 1 6 4 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9	4	4	0.236842	0	0	0.056094	0	16	16	16
4 5 0.236842 1 0.236842 0.056094 1 20 16 25 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16	3	4	-0.76316	0	0	0.58241	0	12	9	16
5 5 1.236842 1 1.236842 1.529778 1 25 25 25 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4			-1.76316	-1	1.763158	3.108726	1	6	4	9
3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16	4		0.236842	1	0.236842	0.056094	1	20		25
3 4 -0.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 0.58241 0 12 9 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 1 1.236842 1.529778 1 25 25 25	5		1.236842	1	1.236842	1.529778	1	25		25
3 4 -0.76316 0 0 0.58241 0 12 9 16 2 4 -1.76316 0 0 3.108726 0 8 4 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 1 1.236842 1.529778 1 25 25 25 <td>3</td> <td>4</td> <td>-0.76316</td> <td>0</td> <td>0</td> <td>0.58241</td> <td>0</td> <td>12</td> <td>9</td> <td>16</td>	3	4	-0.76316	0	0	0.58241	0	12	9	16
2 4 -1.76316 0 0 3.108726 0 8 4 16 3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 9 16 5 4 1.236842 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 -1 -0.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 <t< td=""><td>3</td><td>4</td><td>-0.76316</td><td>0</td><td>0</td><td>0.58241</td><td>0</td><td>12</td><td>9</td><td>16</td></t<>	3	4	-0.76316	0	0	0.58241	0	12	9	16
3 4 -0.76316 0 0 0.58241 0 12 9 16 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 -1 -0.236842 0.056094 1 12 16 9 5 5 1.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0	3	4	-0.76316		0	0.58241	0		9	16
4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0	2	4	-1.76316	0	0	3.108726	0	8	4	16
3 4 -0.76316 0 0 0.58241 0 12 9 16 5 4 1.236842 0 0 1.529778 0 20 25 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 5 0.236842 1 0.236842 0.056094 1	3	4	-0.76316	0	0	0.58241	0	12	9	16
5 4 1.236842 0 0 1.529778 0 20 25 16 5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 </td <td>4</td> <td>3</td> <td>0.236842</td> <td>-1</td> <td>-0.23684</td> <td>0.056094</td> <td>1</td> <td>12</td> <td>16</td> <td>9</td>	4	3	0.236842	-1	-0.23684	0.056094	1	12	16	9
5 4 1.236842 0 0 1.529778 0 20 25 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241	3	4	-0.76316	0	0	0.58241	0	12	9	16
4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 <td< td=""><td>5</td><td>4</td><td>1.236842</td><td>0</td><td>0</td><td>1.529778</td><td>0</td><td>20</td><td>25</td><td>16</td></td<>	5	4	1.236842	0	0	1.529778	0	20	25	16
4 3 0.236842 -1 -0.23684 0.056094 1 12 16 9 5 5 1.236842 1 1.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 <	5	4	1.236842	0	0	1.529778	0	20	25	16
5 5 1.236842 1 1.236842 1.529778 1 25 25 25 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 <t< td=""><td>4</td><td>2</td><td>0.236842</td><td>-2</td><td>-0.47368</td><td>0.056094</td><td>4</td><td>8</td><td>16</td><td>4</td></t<>	4	2	0.236842	-2	-0.47368	0.056094	4	8	16	4
4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	4	3	0.236842	-1	-0.23684	0.056094	1	12	16	9
3 2 -0.76316 -2 1.526316 0.58241 4 6 9 4 2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	5	5	1.236842	1	1.236842	1.529778	1	25	25	25
2 4 -1.76316 0 0 3.108726 0 8 4 16 4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	4	5	0.236842	1	0.236842	0.056094	1	20	16	25
4 2 0.236842 -2 -0.47368 0.056094 4 8 16 4 4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	3	2	-0.76316	-2	1.526316	0.58241	4	6	9	4
4 5 0.236842 1 0.236842 0.056094 1 20 16 25 3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	2	4	-1.76316	0	0	3.108726	0	8	4	16
3 3 -0.76316 -1 0.763158 0.58241 1 9 9 9 4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	4	2	0.236842	-2	-0.47368	0.056094	4	8	16	4
4 4 0.236842 0 0 0.056094 0 16 16 16 5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	4	5	0.236842	1	0.236842	0.056094	1		16	25
5 3 1.236842 -1 -1.23684 1.529778 1 15 25 9 4 5 0.236842 1 0.236842 0.056094 1 20 16 25	3	3	-0.76316	-1	0.763158	0.58241	1	9	9	9
4 5 0.236842 1 0.236842 0.056094 1 20 16 25	4	4	0.236842	0	0	0.056094	0	16	16	16
	5	3	1.236842	-1	-1.23684	1.529778	1	15	25	9
5 4 1.236842 0 0 1.529778 0 20 25 16	4	5	0.236842	1	0.236842	0.056094	1	20	16	25
	5	4	1.236842	0	0	1.529778	0	20	25	16

⁴⁷ The sum of variables ⁴⁸ df - Number of municipalities - variables

3.763158	4	0	0	6	32.86842	30	578	571	638
5	5	1.236842	1	1.236842	1.529778	1	25	25	25
4	4	0.236842	0	0	0.056094	0	16	16	16
4	3	0.236842	-1	-0.23684	0.056094	1	12	16	9
5	5	1.236842	1	1.236842	1.529778	1	25	25	25
3	4	-0.76316	0	0	0.58241	0	12	9	16
4	5	0.236842	1	0.236842	0.056094	1	20	16	25

⁴⁹Tab.5. Pearson's Correlation Coefficient for two variables

During Pearson's Correlation Coefficient for two variables Q1 with Q4. R = 0.19888 has a positive linear but low value link, which means that it is not enough only the number of budget experts to increase transparency and budget accountability but there are also a considerable number of variables that help transparency and accountability of municipalities such as: publication of all budget documents foreseen in the Law on LPFMA (budget allocation according to priorities, revenues, expenditures, budget circulars, investments, subsidies, grants, annual reports, financial statements, etc.), participation the largest of citizens during budget hearings (public hearings, planning, control, decision making, etc.)



Graph.4.Relationship between transparency and budget experts⁵⁰

6.4. STATISTICAL ANALYSIS - DESCRIPTIVE STATISTICS

$$\delta = \sqrt{\sum_{i}^{n} (xi - \bar{x})^{2}} / \text{N-1} \quad 7)^{51}$$

$$Y = E [(x - \mu/\delta)^{3}] \quad 8)^{52}$$
Kurt IxI = E [(x - \mu/\delta)^{4}] \quad 9)^{53}

Descriptive Statistics	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
Mean ⁵⁴	3.76	3.92	4.11	4	4	4.08	4.08	4.03	3.84	4.29	4.16	4.29	4.35	3.94	4.19
Standard Error	0.15	0.17	0.15	0.15	0.17	0.14	0.14	0.18	0.17	0.15	0.15	0.14	0.14	0.17	0.15
Median ⁵⁵	4.00	4	4	4	4	4	4	4	4	5	4	4	5	4	4

 $^{^{\}rm 49}$ Analyzing of the data from the author $^{\rm 50}$ Author ,program R

⁵¹ Formula for deviation standard

⁵² Skewness test

⁵³ Kurtosis test

⁵⁴ Arithmetic average – sum of value /N ,Sum/Count =Mean

⁵⁵ Middle value (when ordered from lowest to highest)

Mode ⁵⁶	4.00	4	4	4	5	4	5	5	4	5	5	4	5	4	5
Standard Deviation ⁵⁷	0.94	1.02	0.92	0.9	1.04	0.83	0.88	1.06	1.04	0.93	0.93	0.87	0.86	1	0.91
Sample Variance	0.89	1.05	0.85	0.81	1.08	0.69	0.78	1.11	1.08	0.86	0.86	0.75	0.73	1	0.82
Kurtosis ⁵⁸	-0.72	0.63	2.37	-0.07	- 0.87	-0.6	-1	0.53	0.17	2.71	2.06	5.28	1.29	-0.5	-0.1
Skewness ⁵⁹	-0.31	-1	-1.3	-0.7	- 0.61	-0.5	-0.41	-1	-0.8	-1.49	-1.2	-1.9	-1.3	-0.7	-0.9
Range ⁶⁰	3.00	4	4	3	3	3	3	4	4	4	4	4	3	3	3
Minimum ⁶¹	2.00	1	1	2	2	2	2	1	1	1	1	1	2	2	2
Maximum ⁶²	5.00	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Sum ⁶³	143	149	156	152	152	151	155	145	142	163	154	163	161	130	155
Count ⁶⁴	38	38	38	38	38	37	38	36	37	38	37	38	37	33	37

⁶⁵Tab.6. Descriptive Statistics for budget transparence Q1-Q15

Descriptive Statistics	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
Mean	3.97	4.28	4.3	4.09	4.14	3.9	4.24	4.3	4	4.2	4.24	4.29	4.21	4.05	4.29
Standard Error	0.17	0.16	0.15	0.16	0.12	0.1	0.16	0.13	0.13	0.1	0.14	0.14	0.14	0.12	0.12
Median	4	4.5	4	4	4	4	5	4	4	4	4	4.5	4	4	4
Mode	5	5	5	4	4	4	5	4	4	5	5	5	5	4	5
Standard Deviation66	1.03	0.94	0.91	0.93	0.73	0.9	0.98	0.81	0.79	0.8	0.85	0.87	0.87	0.77	0.77
Sample Variance	1.06	0.89	0.83	0.87	0.54	0.8	0.97	0.66	0.63	0.7	0.73	0.75	0.77	0.59	0.59
Kurtosis	0.65	3.34	4.25	0.14	-1	-0.6	2.14	6.39	-0.4	-0.1	0.67	0.73	-0.7	-0.1	0.67
Skewness	-0.9	-1.7	-1.8	-0.9	-0.2	-0.4	-1.4	-1.9	-0.4	-0.7	-1	-1.1	-0.7	-0.5	-0.9
Range ⁶⁷	4	4	4	3	2	3	4	4	3	3	3	3	3	3	3
Minimum	1	1	1	2	3	2	1	1	2	2	2	2	2	2	2
Maximum	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Sum ⁶⁸	143	154	159	139	145	146	157	159	144	160	161	163	160	154	163
Count ⁶⁹	36	36	37	34	35	37	37	37	36	38	38	38	38	38	38

Tab.7. Descriptive Statistics for budget transparence Q16-Q30

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⁵⁶ Most frequently occurring value

Average or typical distance scores vary from the mean, about 0.94 budget transparence on average. In statistics, the standard deviation is a measure that is used to quantify the amount of variation or dispersion of a set of data values .A low standard deviation indicates that the data points tend to be close to the mean (also called the expected value) of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values.

⁵⁸ In probability theory and statistics, kurtosis is a measure of the "tailedness" of the probability distribution of a real-valued random variable.

⁵⁹ In probability theory and statistics, skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable about its mean. The skewness value can be positive or negative, or undefined.

⁶⁰ In statistics, the range of a set of data is the difference between the largest and smallest values. Highest Budget transparence – Lowest budget transparence

⁶¹ Lowest budget transparence values in dataset (good to check to make reasonable)

⁶² Highest budget transparence values in dataset (good to check to make reasonable)

⁶³ All values added together

⁶⁴ Total number of values in the dataset (same as N) ,number of municipalities

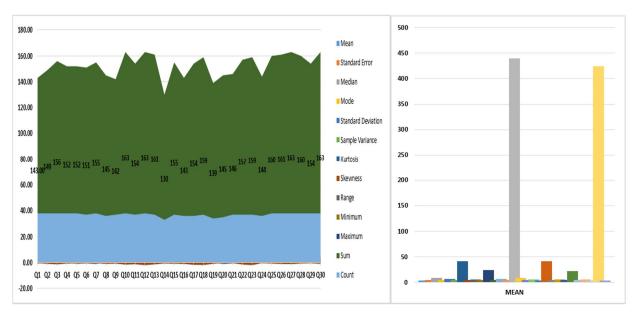
⁶⁵ Statistical analysis of econometric models from author

⁶⁶ The calculation is the same as in Q1-q16 for budget transparence

⁶⁷ Highest Budget transparence – Lowest budget transparence Q16-Q30

⁶⁸ Ibid q16-q30

⁶⁹ Ibid



 $^{70}\mbox{Graph}.$ 5. Descriptive analysis for budget transparence Q1-Q30

Graph.6. Mean

6.5. GENERAL STATISTICS FOR BT⁷¹ AND FA⁷²

VARIABLES	MUNICIPALITIES	MIN	MAX	SUM	MEAN	STD. DEVIATION
ITEM 1	38	1	5	143	3.763	0.943
ITEM 2	38	1	5	129	4.200	0.834
ITEM 3	38	1	5	139	8.084	23.904
ITEM 4	38	1	5	127	3.850	1.089
ITEM 5	38	1	5	137	5.982	13.759
ITEM 6	38	1	5	120	4.050	0.887
ITEM 7	38	1	5	116	41.514	108.774
ITEM 8	38	1	5	95	3.833	1.150
ITEM 9	38	1	5	145	5.754	12.832
ITEM 10	38	1	5	95	4.200	1.056
ITEM 11	38	1	5	118	24.077	50.364
ITEM 12	38	1	5	119	4.300	0.979
ITEM 13	38	1	5	146	6.071	13.451
ITEM 14	38	1	5	111	4.118	0.857
ITEM 15	38	1	5	113	439.496	2003.397
ITEM 16	38	1	5	87	8.119	1.028
ITEM 17	38	1	5	130	4.105	1.106
ITEM 18	38	1	5	141	5.796	23.821
ITEM 19	38	1	5	131	3.700	0.937
ITEM 20	38	1	5	118	41.498	12.421
ITEM 21	38	1	5	106	4.000	0.865

Graph with program R from author
 Budget transparence
 Financial accountability

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ITEM 22	38	1	5	140	5.813	108.295
ITEM 23	38	1	5	107	4.200	0.918
ITEM 24	38	1	5	57	21.582	12.934
ITEM 25	38	1	5	113	4.000	0.834
ITEM 26	38	1	5	119	5.622	45.048
ITEM 27	38	1	5	126	3.800	0.973
ITEM 28	38	1	5	125	424.419	12.157
ITEM 29	38	1	5	117	3.8	0.768
ITEM 30	38	1	5	125	424.419	1958.653

⁷³Tab.8. Total Statistics⁷⁴

Based on the descriptive analysis, from survey in the local level -municipalities, the variables perceived as the most transparent from all variables are (item Q22 or 140 points, Q18 or 141 points, Q9 or 145 points, Q1 or 143, Q13 or 146 pike), while areas which have shown less fiscal transparency are (item Q24 or 57 points, item 16 or 87 points,). All municipalities based on the questionnaire according to the SL have emphasized that their municipality (Comprehensive Revenue Plan for Revenues and Expenditures is available to the public, the Municipality defines the requirements for fiscal / budget transparency in cooperation with the central level- Ministry of Finance).

The standard deviation in variables (Q29, Q27, Q23, Q21, Q19, Q14, Q1, Q2, Q6, Q12) shows that municipalities rarely carry out budget analyzes based on their strategic plan, in reliable data on primary projects in the benefit of the population, and suggesting that municipalities they rarely carry out the efficiency analyzes, before approving spending programs.

While variables with the higher standard deviation, shown that municipalities have the heterogeneity in the variables (Q30, Q26, Q22, Q15, Q11, Q7). For example one of the variables as: the form and structure of the annual budget (organization, form of the document, types of information to be included from planning to implementation) are regulated by the Constitution and the law that require approval from the Municipal Assembly and are available to the public.

6.6. MUNICIPAL RANKING TABLE ACCORDING TO BUDGET TRANSPARENCY INDEX

Based on the results of the survey, the Fiscal Transparency Index was established to rank 38 municipalities regarding transparency and accountability in the public budget. The index is calculated by summing up the recorded results for all study articles. So.⁷⁵

General Transparency Index = $\Sigma \text{ Xi } 10)^{76}$

MUNICIPALITIES	TOTAL FROM LS FOR 30 Q	MUNICIPALITIES	TOTAL	RANK	PERCENT	
PEJË	143	PRIZEREN	146	1	100.00%	
GJAKOVË	129	LIPJAN	145	2	97.20%	
GJILAN	139	PEJË	143	3	94.50%	
DRAGASH	127	MALISHEVË	141	4	91.80%	
KAQANIK	137	GRAQANICË	140	5	89.10%	
KLINË	120	GJILAN	139	6	86.40%	

⁷³ Statistical analysis of econometric models from author

⁷⁴ Source: Author survey.

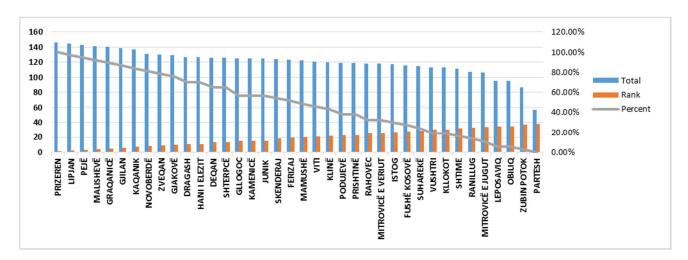
⁷⁵ Note: The rankings of municipalities have been made only by the 30 variables studied.

⁷⁶ Where, X are the points of the items, and varies from 1 to 30.

FUSHË KOSOVË	116	KAQANIK	137	7	83.70%	
LEPOSAVIQ	95	NOVOBERDË	131	8	81.00%	
LIPJAN	145	ZVEQAN	130	9	78.30%	
OBILIQ	95	GJAKOVË	129	10	75.60%	
RAHOVEC	118	DRAGASH	127	11	70.20%	
PODUJEVË	119	HANI I ELEZIT	127	11	70.20%	
PRIZEREN	146	DEQAN	126	13	64.80%	
SHTIME	111	SHTERPCË	126	13	64.80%	
VUSHTRI	113	GLLOGOC	125	15	56.70%	
ZUBIN POTOK	87	KAMENICË	125	15	56.70%	
ZVEQAN	130	JUNIK	125	15	56.70%	
MALISHEVË	141	SKENDERAJ	124	18	54.00%	
NOVOBERDË	131	FERIZAJ	123	19	51.30%	
MITROVICË E VERIUT	118	MAMUSHË	122	20	48.60%	
MITROVICË E JUGUT	106	VITI	121	21	45.90%	
GRAQANICË	140	KLINË	120	22	43.20%	
RANILLUG	107	PODUJEVË	119	23	37.80%	
PARTESH	57	PRISHTINË	119	23	37.80%	
KLLOKOT	113	RAHOVEC	118	25	32.40%	
PRISHTINË	119	MITROVICË E VERIUT	118	25	32.40%	
DEQAN	126	ISTOG	117	27	29.70%	
GLLOGOC	125	FUSHË KOSOVË	116	28	27.00%	
ISTOG	117	SUHAREKË	115	29	24.30%	
KAMENICË	125	VUSHTRI	113	30	18.90%	
SHTERPCË	126	KLLOKOT	113	30	18.90%	
FERIZAJ	123	SHTIME	111	32	16.20%	
VITI	121	RANILLUG	107	33	13.50%	
JUNIK	125	MITROVICË E JUGUT	106	34	10.80%	
HANI I ELEZIT	127	LEPOSAVIQ	95	35	5.40%	
MAMUSHË	122	OBILIQ	95	35	5.40%	
SUHAREKË	115	ZUBIN POTOK	87	37	2.70%	
SKENDERAJ	124	PARTESH	57	38	0.00%	

Tab.9. Municipal ranking table according to Budget Transparency Index⁷⁷

⁷⁷ A ranking is a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or 'ranked equal to' the second.



Graph.7.Municipal ranking according to Budget Transparency Index

VII. CONCLUSIONS AND RECOMMENDATIONS

The budget should be closely linked to the preparation and presentation of credible information to legitimize accountability or transparency and to allow accurate assessment of local and central governments, taking into account the rewards for achievement.

In some budget users or Municipalities, there are shortcomings in the organization of their plans according to the primary objectives, such as:

- 1. Link between budget planning and utilization,
- 2. Poor institutional control in the preparation and use of the budget by each budget user,
- 3. Reporting for the budget realized in the programs that are initially planned,
- 4. Apart from the identified problems, there are also shortcomings in the transparency of public documents at the municipal level.

This research is of great importance, and all the hypotheses were verified through econometric models, serving all researchers for further or more extensive analysis.

Biography for author

Enkeleda Lulaj, I'm working at University "Haxhi Zeka" in Peja, State of the Kosovo. I'm teaching assistant for Accounting and Finance subjects, also I'm Member of the Board of the University.

Each researcher who wants to know how I have used econometric models, and there is ambiguity during using them. Everyone can write to me at email: enkeledalulaj@gmail.com

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