



FINANCIAL EFFECTIVENESS OF MUNICIPALITIES IN GREECE AND THE USE OF MODERN FINANCIAL TOOLS

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ABSTRACT

Municipalities are autonomous economic and administrative entities, with common actions and responsibilities. The primary aim of this survey is to investigate and observe phenomena and views related to issues concerning Greek municipalities, such as the financial problems they face and which is the funding scheme they prefer.

The entire sample of municipalities in Greece has been separated into categories, based on the effectiveness of financial management and financial performance into effective and ineffective ones. In this study, we investigated the existence of differences between the characteristics of these two categories.

The main objective is to investigate the views of Mayors in each Municipality as regards the influence of financial effectiveness on: (a) which is the most important source of finance, (b) which is the most important financial instrument and (c) which is the financing instrument that would prefer to use.

Keywords: Municipalities, Financial Effectiveness, Funding, Financial Tools, Empirical Investigation, Greece

JEL Classification: Q3, Q4

Introduction

Municipalities are autonomous economic and administrative entities, with common actions and responsibilities. On the other hand, all municipalities are quite different considering specific characteristics, such as geographic, demographic and economic. The aim of this research is to separate the entire sample of municipalities in Greece into categories, based on the effectiveness of financial management and financial performance into effective and ineffective ones.

In this study, we investigated the views of Mayors in each Municipality as regards the influence of financial effectiveness on: (a) which is the most important source of finance, (b) which is the most important financial instrument and (c) which is the financing instrument that would prefer to use.

The following chapter will present the methodology used, including a description of the sampling and data collection process, determination of the population, specification of the scope of the sample, definition of the sampling unit, etc. The third chapter will present the results of the methodology used, and the results of data analysis. Finally, the fourth chapter will set out the overall conclusions of the research.

Methodology

This chapter presents the research methodology adopted in conducting this empirical project. More specifically, it includes: (a) the definition of population and the study sample, (b) the data collecting method, (c) the response to the survey and the characteristics of Municipalities participating, and (d) the process whereby the research tool used to collect data was created (structured questionnaire) and its analytical presentation. The process of choosing the sample and collecting data is complex and includes six stages (Stathakopoulos, 2001): Definition of population, Determination of the sampling frame, Definition of sampling unit, Determination of sample size, Implementation. From this process the total number of respondents that will participate in the survey emerges.

The first and most important step in the primary data collection process is to define characteristics on the basis of which the population to be examined will be defined (Churchill and Iacobucci, 2002). The full definition of the population requires the inclusion of four basic parameters: the item, the sampling unit, the extent of the sampling and the time (Parasuraman et al., 2004). The item and sampling unit in this survey are defined as the Municipalities of Greece, the extent of sampling concerned the whole of the Greek state and the time it was conducted was from 10 June 2010 up to 30 September 2010. Communities in Greece were excluded from the population in the survey due to their small size and different needs in relation

to the Municipalities. So in the end, the survey population was defined as being the 914 Greek Municipalities throughout the state, as recorded in the inventory of the National Statistical Service (2001).

The next step, after defining the population to be examined, is to locate a sampling frame which must be composed of the fullest and most accurate inventory possible of members of the population to be examined (Churchill and Iacobucci, 2002). The sampling frame used in this survey was the most recent inventory of the National Statistical Service (2001) which includes the census of the population of Greece based on geographical Districts, Prefectures, Municipalities and Communities.

The sampling units were defined as being the Greek Municipalities. As regards the respondents from whom survey data was collected, the «key informant method» was used, meaning the person in the survey unit (Municipality of Greece) who had the greatest knowledge of the subject of the survey. This method reduces to a satisfactory degree any concerns regarding the reliability of answers given by respondents, as the respondent chosen in each unit is the best available person with knowledge of the data that must be collected through the survey (Kumar, Stern and Anderson, 1993). In this survey the key informant was chosen to be the Mayor in each Municipality examined.

Sampling methods considerably affect the possibility of generalizing the results. In order that the results emerging in the sample might be generalized throughout the total population, a probability sample must be used (Kinnear and Taylor, 1996) in which each unit in the sample has an equal chance of being selected from the population. The safest way of producing a probability sample is the population census and the definition of the total census as a sample in the survey (Stathakopoulos, 2001). This method was followed in this survey, ensuring the generalization of results.

As a result of the census method, the size of the sample coincides with the size of the population in the 914 municipalities recorded in the inventory of the National Statistical Service (2001). With reference to conducting the survey, the two following sub-paragraphs explain the method of contact with the respondents and the reasons they were finally chosen, as well as the results of the method. Completion and collection of questionnaires was carried out during the period from 10 June 2010 to 30 September 2010 in one phase with the use of self-completion questionnaires. The sample in the survey (which coincides with the population in the survey) is characterized by considerable heterogeneity, as it has been specified that it will be all the Municipalities in Greece.

Research Results and Data Analysis

Municipalities that responded to the survey represent the total population as there was good stratification and representation from all Prefectures in Greece with fairly satisfactory response percentages in each Prefecture. The Greek Municipalities that finally answered the questionnaire represent all the Municipalities in Greece as there was no Prefecture in which the individual response percentage was not satisfactory. Out of the 299 questionnaires collected, 41 were excluded from the analyses due to a large number of answers to questions that would have reduced the statistical reliability of the findings. Additionally in these 41 excluded questionnaires, cases were observed in which the respondents misinterpreted the hierarchical questions. In the end out of the 299 questionnaires 258 exploitable ones were taken into account in the survey (87%), a number which is statistically acceptable (eg. Kohli and Jaworski, 1990, Narver and Slater 1990, Ruekert, 1992).

Table 1. Respondents per Prefecture

Geographical Districts	Prefectures	Municipalities Participation (number)	Total Number of Municipalities	Response	Municipalities Participation (population)	Total Population of Municipalities	Response
Attica	Athens	24	48	50%	1.111.093	2.664.776	42%
	Eastern Attica	9	26	35%	212.327	365.731	58%
	Western Attica	5	12	42%	115.702	150.847	77%
	Piraeus	9	16	56%	319.164	540.540	59%
Subtotal		47	102	46,07%	1.758.286	3.721.894	47,24%
Rest of Central Greece and Euboea	Etoloakarnania	7	29	24%	75.881	224.429	33,81%
	Boeotia	7	18	39%	68.524	125.681	54,52%
	Euboea	9	25	36%	31.968	212.993	15,01%
	Evrytania	5	11	45%	12.542	32.053	39,13%
	Fthiotida	9	23	39%	42.466	177.631	23,91%
	Fokida	4	12	33%	15.190	48.284	31,46%

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Subtotal		41	118	34,74%	246.571	821.071	30,03%
Peloponnese	Argolida	6	14	43%	52.326	104.323	50,16%
	Arcadia	7	22	32%	28.055	101.444	27,66%
	Achaia	7	21	33%	27.611	321.389	8,59%
	Ilia	5	22	23%	7.849	193.288	4,06%
	Corinthia	6	15	40%	87.142	154.624	56,36%
	Laconia	9	20	45%	32.404	97.966	33,08%
	Messinia	6	29	21%	72.767	175.213	41,53%
Subtotal		46	143	32,16%	308.154	1.148.247	26,84%
Ionian Islands	Zakinthos	2	6	33%	16.475	39.015	42,23%
	Corfu	4	13	31%	18.279	110.317	16,57%
	Cefalonia	4	8	50%	14.448	38.435	37,59%
	Lefkada	2	6	33%	4.444	21.843	20,35%
Subtotal		12	33	36,36%	53.646	209.610	25,59%
Epirus	Arta	2	13	15%	9.126	75.634	12,07%
	Thesprotia	2	8	25%	9.527	43.071	22,12%
	Ioannina	10	28	36%	25.967	165.500	15,69%

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	Preveza	2	8	25%	14.385	58.304	24,67%
Subtotal		16	57	28,07%	59.005	342.509	17,23%
Thessaly	Karditsa	6	20	30%	32.286	127.774	25,27%
	Larissa	9	28	32%	173.782	272.966	63,66%
	Magnesia	8	22	36%	22.214	202.632	10,96%
	Trikala	7	23	30%	64.352	134.963	47,68%
Subtotal		30	93	32,25%	292.634	738.335	39,63%
Macedonia	Grevena	4	8	50%	17.273	35.255	48,99%
	Drama	2	8	25%	11.215	103.545	10,83%
	Imathia	4	12	33%	52.620	143.618	36,64%
	Thessaloniki	14	45	31%	263.496	1.057.825	24,91%
	Kavala	4	11	36%	89.436	145.054	61,66%
	Kastoria	2	12	17%	6.117	52.063	11,75%
	Kilkis	4	11	36%	35.481	88.654	40,02%
	Kozani	6	16	38%	75.182	152.138	49,42%
	Pella	3	11	27%	51.276	145.797	35,17%
	Pieria	3	13	23%	21.074	129.846	16,23%

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	Serres	5	22	23%	88.768	197.774	44,88%
	Florina	2	8	25%	17.267	51.770	33,35%
	Chalkidiki	3	14	21%	14.166	104.894	13,51%
Subtotal		56	191	29,31%	743.371	2.408.233	30,87%
Thrace	Evros	4	13	31%	26.207	149.354	17,55%
	Xanthi	2	7	29%	52.270	97.525	53,60%
	Rodopi	4	9	44%	62.770	104.854	59,86%
Subtotal		10	29	34,48%	141.247	351.733	40,16%
Aegean	Dodecanese	7	25	28%	89.869	189.152	47,51%
	Cyclades	8	20	40%	35.824	106.836	33,53%
	Lesvos	4	17	24%	23.231	108.747	21,36%
	Samos	2	8	25%	14.622	43.595	33,54%
	Chios	2	10	20%	2.920	53.408	5,47%
Subtotal		23	80	28,75%	166.466	501.738	33,18%
Crete	Iraklio	7	26	27%	171.971	292.489	58,80%
	Lassithi	3	8	38%	45.683	74.613	61,23%
	Rethymnon	4	11	36%	10.456	82.956	12,60%

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	Chania	4	23	17%	22.400	149.703	14,96%
Subtotal		18	68	26,47%	250.510	599.761	41,77%
Total		299	914	32,71%	4.019.890	10.843.131	37,07%

Source: Pallis and Pallis, 2013

Division of Sample into Categories Depending on Financial Performance

This section of analysis aims to divide the entire sample into categories, based on financial management efficiency (efficient - inefficient municipalities). (Pallis and Pallis, 2014) Cluster analysis was used to separate the sample in groups. (Pallis and Pallis, 2014) This statistical analysis is a widely used method in various scientific fields, including biology, IT and marketing (Kinnear and Taylor, 1996). The aim is to explore the possibility of dividing the sample into clusters based on one or more characteristics (variables) (Kinnear and Taylor, 1996).

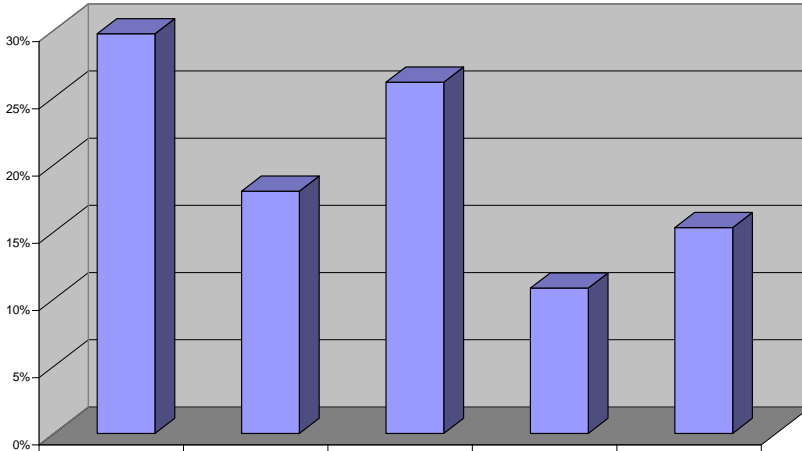
In this research, three variables were used for the creation of clusters, which are: a municipality's borrowing capacity, flexibility in non-investing costs, and flexibility in investment costs. These three variables were considered to be the key dimensions of efficiency in financial management; therefore, their use is illustrative of efficiency. (Pallis and Pallis, 2014) The observations that resulted from sampling can indeed be divided into two groups on the basis of the three questions above. The first cluster includes 110 municipalities, while the second one includes 146 municipalities. The value for the first cluster centers (central observation) was 3 for all three variables, while the value for the second cluster centers was 2 for all three variables. Considering that the potential answers to the questions used ranged from 1: very good to 4: poor, the first cluster can be named "Municipalities with inefficient financial management" and the second cluster can be named "Municipalities with efficient financial management". (Pallis and Pallis, 2014)

Descriptive Measures of Variables for Municipalities with Ineffective Financial Management

Table 2. The Most Important Source of Funding

Source of Funding	Frequency	Percentage %
State subsidies	33	30
Own revenue from state taxes and business activity	20	18
Revenue yield from direct taxation	29	26
Revenue yield from indirect taxation	12	11
European funds	17	15
Total	111	100

Figure 1. The Most Important Source of Funding

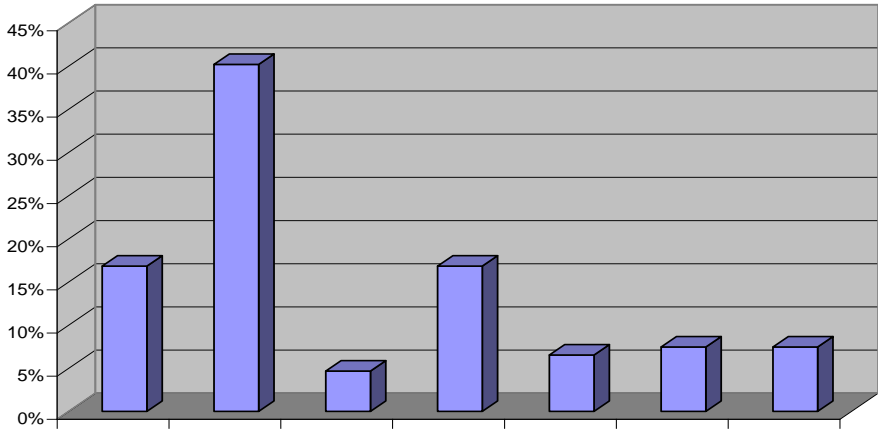


The outcome of the analysis clearly indicates that the most important source of finance for municipalities with ineffective financial management are, for the majority of mayors, state subsidies (30% percent). A smaller percentage of mayors consider alternative sources to be more important. Specifically: 26% of the sample consider revenue from direct taxation to be most important, 18% own revenues from levies and their own business enterprise initiatives, and 15% give top ranking to European programs. The source of finance characterized as the most important by the smallest number of mayors in this category of municipality, that is, 11%, was the revenues derived from indirect taxation.

Table 3. Financial Instruments that Municipalities Use

Financial Instrument	Frequency	Percentage %
Local taxes	18	17%
European programs	43	40%
Bank loans	5	5%
State loans	18	17%
Leasing	7	7%
PPP	8	7%
Utilization of real estate assets	8	7%
Total	107	100%

Figure 2. Financial Instruments that Municipalities Use

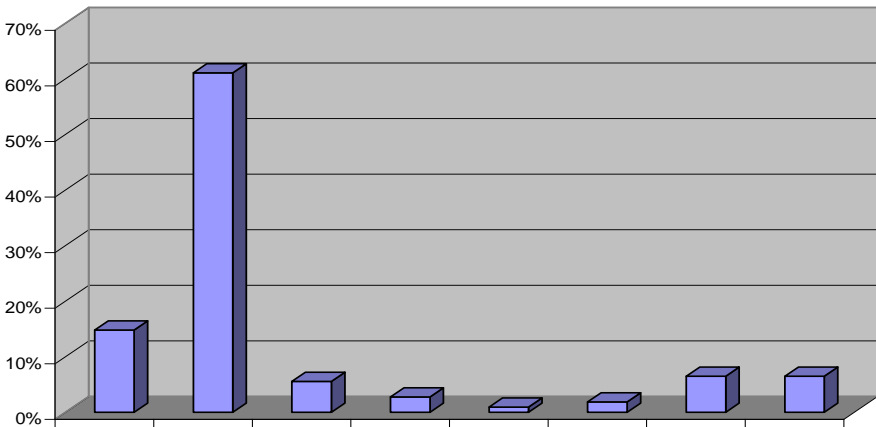


The vast majority of mayors (40%) in municipalities with ineffective financial management replied to this question by stating that their most important financial instrument is European program funding. Responses giving top ranking to local taxation and lending from government bodies were fewer, though worth noting, given that 17% of mayors in charge of municipalities in this category ranked these sources as most important. All other forms of financing were judged to be the most fundamental by a much smaller percentage of respondents. It is worth noting that the three forms of borrowing were ranked as the most important instruments by 29% of mayors in this category, a significantly higher percentage than the corresponding percentage of the overall sample (21%). Diminished financial capacity is probably the reason that these municipalities rely to a greater extent on loan financing.

Table 4. Financial Instruments that Municipalities Prefer to Use

Financial Instrument	Frequency	Percentage %
Local taxes	16	15%
European programs	66	61%
Bank loans	6	6%
State loans	3	3%
Leasing	1	1%
PPP	2	2%
Utilization of real estate assets	7	6%
Municipal bond issue	7	6%
Total	108	100%

Figure 3. Financial Instruments that Municipalities Prefer to Use



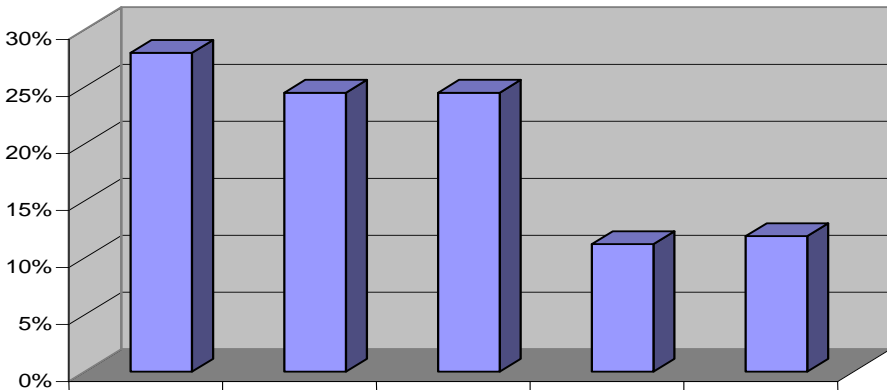
As observed in the previous table, European programs are the financing instrument which the vast majority of mayors (61%) of municipalities with ineffective financial management would prefer to use. 15% of mayors would prefer local taxation to all the other instruments, 6% bank borrowing, 3% exploitation of assets and issue of municipal bonds, 3% borrowing from government bodies, 2% public & private partnerships (PPPs) and only 1 mayor (1%) favored leasing. These results are not very different from the corresponding results for the overall sample. This fact gives an indication that for the specific variable the factor effective financial management is a differentiating parameter.

Descriptive Measures of Variables for Municipalities with Effective Financial Management

Table 5. The Most Important Source of Funding

Source of Funding	Frequency	Percentage %
State subsidies	40	28%
Own revenue from state taxes and business activity	35	24%
Revenue yield from direct taxation	35	24%
Revenue yield from indirect taxation	16	11%
European funds	17	12%
Total	143	100%

Figure 4. The Most Important Source of Funding

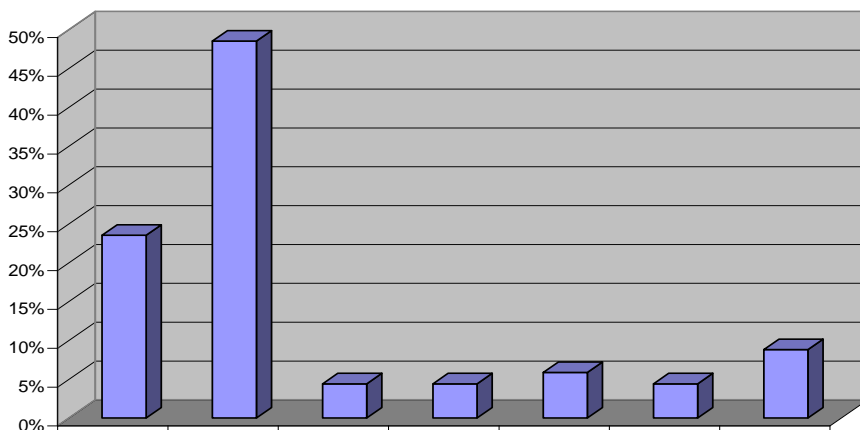


According to the outcomes of the analysis, the source of finance judged to be most important by the majority of mayors in municipalities with effective financial management, i.e. 28%, is state subsidies. Fewer Mayors in this category consider own revenues from levies and business activities (24%), or collection of revenue from direct taxation (24%) as being the most significant sources. Lastly, the sources of finance which were characterized as the most important by fewer mayors in this category of municipality are European programs (12%), and revenues from indirect taxation at 11%.

Table 6. Financial Instruments that Municipalities Use

Financial Instrument	Frequency	Percentage %
Local taxes	32	24%
European programs	66	49%
Bank loans	6	4%
State loans	6	4%
Leasing	8	6%
PPP	6	4%
Utilization of real estate assets	12	9%
Total	136	100%

Figure 5. Financial Instruments that Municipalities Use

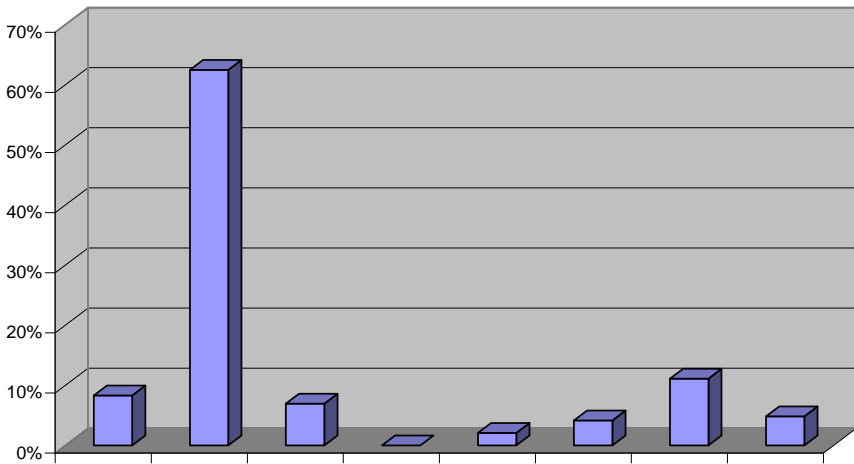


In response to this question, the majority of mayors (49%) in municipalities with effective financial management said that their most important financial instrument was European program funding. A significantly large number of participants in this category (24%) ranked local taxation first. All other forms of financing were judged to be the most fundamental by a much smaller percentage of respondents. The differences between the percentages of the two groups of municipalities for all three forms of borrowing (borrowing from government agencies, bank borrowing, leasing) is of particular interest. The sum of the three percentages for the first group of municipalities is 29%, whereas for the second group it is 14%.

Table 7. Financial Instruments that Municipalities Prefer to Use

Financial Instrument	Frequency	Percentage %
Local taxes	12	8%
European programs	90	63%
Bank loans	10	7%
State loans	0	0%
Leasing	3	2%
PPP	6	4%
Utilization of real estate assets	16	11%
Municipal bond issue	7	5%
Total	144	100%

Figure 6. Financial Instruments that Municipalities Prefer to Use



With regard to the previous question, the results indicate that the financing instrument which the vast majority of mayors (63%) of municipalities with effective financial management would prefer is European program funding. Moreover, 11% of mayors in this category would prefer to use the exploitation of municipal assets, 7% bank borrowing, 8% local taxation, whereas other financing instruments were ranked first by only a very small percentage of the respondents.

Conclusions

This research attempted to divide the entire sample into categories, based on the efficiency of financial management (efficient - inefficient municipalities). Cluster analysis was used to separate the sample in groups. Three variables were used to create the clusters in this research: a municipality's borrowing capacity, flexibility in non-investing costs, and flexibility in investing costs. As shown, the municipalities were divided into two clusters, based on the three questions above. The first cluster includes 110 municipalities (Municipalities with inefficient financial management) and the second cluster includes 146 (Municipalities with efficient financial management).

In this study, we investigated the existence of differences between the characteristics of these two categories. The main objective is to investigate the three mentioned questions regarding the use of modern financial tools by Greek municipalities.

The outcome of the analysis clearly indicates that the most important source of finance for municipalities with effective and ineffective financial management are, for the majority of mayors, state subsidies (28% & 30% percent respectively). Responses to the specific question are not differentiated between the two groups of municipalities. Therefore the sources from which financial resources are drawn do not affect the effectiveness of financial management.

On the other hand, the vast majority of mayors (40%) in municipalities with ineffective financial management replied to the question by stating that their most important financial instrument is European program funding. In response to the same question, the majority of mayors (49%) in municipalities with effective financial management said that their most important financial instrument was European program funding. The differences between the percentages of the two groups of municipalities for all three forms of borrowing (borrowing from government agencies, bank borrowing, leasing) is of particular interest. The sum of the three percentages for the first group of municipalities is 29%, whereas for the second group it is 14%. Therefore, the observation made in the corresponding section of the previous chapter, namely that municipalities with ineffective financial management rely to a greater extent on loan financing, which, in turn, makes their financial situation more difficult, is confirmed.

As observed from the answers of the third question, European programs are the financing instrument which the vast majority of mayors (61%) of municipalities with ineffective financial management would prefer to use. These results are not very different from the corresponding results for the overall sample. This fact gives an indication that for the specific variable the factor effective financial management is a differentiating parameter. With regard to the same question, the results indicate that the financing instrument which the vast majority of mayors

(63%) of municipalities with effective financial management would prefer is European program funding. The results are slightly different from those of the first category, but the differences are small. Thus, it can theorized that municipal financial performance does not affect the extent to which mayors may wish to use any particular financial instrument.

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