

# How to Manage the Components of Financial Sustainability in Local Governments

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## Abstract

This study aims to evaluate three dimensions proposed by the IFAC (International Federation of Accountants) in relation to impact financial sustainability. These dimensions are service, revenue, and debt. In 2017 and 2018, a regression analysis was conducted for Italian local governments on the different components of financial sustainability. Based on goal-setting theory, and in combination with the ambition to pursue adequate good financial sustainability, significant results were demonstrated. It was seen that these local governments would have to maintain a good level of autonomy with current revenue. They would also need to control the quantity and quality of service in order to pursue financial sustainability. This study suggests practical implications for policymakers and the managerial class, and it seeks to identify methods to drive and keep financial sustainability under control. It also seeks to define current and future management strategies that focus on pursuing intergenerational equity in local governments.

**Keywords:** financial sustainability, income statement, Italian local governments, goal setting theory, regression analysis

## 1. Introduction

In recent years, the international financial crisis has made financial sustainability a relevant concept in public entities. This is particularly true in the case of local governments, which have been involved in a decrease in public revenue and cuts in public expenditure (Bailey, Valkama, & Salonen, 2014; Checherita-Westphal, Hughes Hallett, & Rother, 2014; IMF, 2014). Financial sustainability is considered a component of wider concepts, such as financial health or financial condition (CICA 1997; Cuadrado-Ballesteros, Mordán, & García-Sánchez, 2014; Zafra-Gómez, López-Hernández, & Hernández-Bastida, 2009a, 2009b, 2009c). Financial health, or financial condition, refers to a government's ability to provide public services while satisfying financial obligations (CICA, 2009; GASB, 1987). Sustainability generally refers to the preservation of citizens' social wellbeing through the delivery of public policies and services. It is the ability to maintain existing public services and cover obligations to creditors without increasing the indebtedness and taxation levels (Cuadrado-Ballesteros, Mordán, & Frías-Aceituno, 2016). Fiscal sustainability is—at the state and local levels—the long-term capability of a government to consistently meet its financial responsibilities. It reflects the adequacy of available revenue to ensure that services can continue to be provided. It also ensures capital levels that the public demands (Chapman, 2008).

Accordingly, European Union (EU) fiscal sustainability reports (2012, 2015, 2018) and IPSASB practice guidelines (2013) document that financial sustainability is closely related to income. Traditionally, income statements have been used to represent financial sustainability. The reason for this lies in the way these statements show items of revenue and expenses. These aspects are shown on an accrual basis. They reflect the capacity of the government to provide public services with its available resources, as opposed to providing them with additional debt incurrence. Scholars, including Rodríguez-Bolívar et al. (2016a), have affirmed that the income statement is an adequate approach for an examination of financial sustainability, as it represents the three inter-related dimensions of long-term fiscal sustainability proposed by the IPSASB (2013)—service, revenue, and debt. These dimensions can be investigated in light of their double aspect. Through this investigation, the capacity of the entity to manage a single dimension (e.g., services) can be seen, as well as the entity's level of

dependency on external factors. Therefore, the aim of the study is to analyze how the components of service, revenue, and debt influence the level of financial sustainability. Thanks to income statements, it is possible to study the components of each dimension in greater detail, and determine how to manage financial sustainability.

The Goal-setting theory asserts that people with specific goals perform better than those with vague goals (Latham, 2004). Under this theory, it can be hypothesized that public managers, as well as the political class, possess the understanding and ability to pursue their goals of increased performance (Locke & Latham, 2002). This study is based on a 2017 and 2018 sample of 103 Italian local governments, consisting of municipalities with more than 60,000 inhabitants. A regression model was used to investigate how the financial sustainability of Italian local governments was affected by specific components of revenue (expressed by the level of current and capital revenue), service (the level of current and capital expense), and indebtedness (financial debt, commercial debt, debts for transfers and contributions, and total debt).

The Italian context was selected due to its reforms. These reforms were introduced in the last decades, and they have, among other things, significantly increased the financial autonomy of local governments. This, in turn, encouraged politicians and managers to preserve the financial health of these local governments. Although this study takes place in a specific setting, similar processes have occurred around the globe. For this reason, the results of this study are expected to be useful in an international context.

Findings emerging from the empirical analysis document reflect that current revenue has a positive impact on financial sustainability. On the contrary, capital revenue negatively influences financial sustainability. Current expenditure presents a negative coefficient, while capital expenditure has a positive influence on financial sustainability. Not all components of the debt affect financial sustainability. For example, debt origin (financial, commercial, or for transfers) is not connected with the evolution of financial sustainability. The present study results suggest that public managers should rely on resources of internal source. Thus, the autonomy of local governments is a central concept, considering its remarkable increase in recent years (Boetti, Piacenza, & Turati, 2012). For local governments to be autonomous, they must develop competencies and responsibilities in order to pursue a management strategy with the aim of practicing efficiency and effectiveness.

According to the goal-setting theory, results from the current study demonstrate several aspects of financial sustainability, and it is essential that these are understood. The first of these aspects is understanding the components of each dimension of financial sustainability. The second of these aspects is understanding how increased financial sustainability can continuously improve performance and better satisfy citizens' expectations. This study has the potential to be useful to international readers, particularly local governments, adding new elements to the literature on financial health in the public sector. It could also prove to be essential in evaluating the role of different components of financial sustainability in the Italian context.

The remainder of this report is structured as follows: Section 2 is devoted to the background, theoretical framework, and hypothesis development. A description of the sample characteristics and methodology is provided in Section 3. The research results follow, and the discussion and conclusions are presented in the last section of the report.

## **2. Theoretical Background and Hypothesis Development**

Under the lens of the goal-setting theory, it is possible to demonstrate that people with specific goals perform better than those with vague goals (Latham, 2004). This theory offers different points of view. It can assess the effectiveness of specific, difficult goals, the relationship of goals to affect, the relation of goals to self-efficacy, and the generality of goal effects across people, tasks, countries, time spans, experimental designs, and goal sources, among other things (Locke & Latham, 2006). Public managers can identify their goals using this theory to evaluate the effectiveness of clear and specific goals in the public sector; with this focus they are encouraged to exert more effort in achieving the goals, and this inevitably increases performance (Locke & Latham, 2002). One condition of the theory is that the individual must have the ability and knowledge to attain a goal (Latham, 2004). In this study, it is assumed that the goal is to pursue an adequate level of financial sustainability. Due to this reason and for adequate value, the manager has to know the different components influencing financial sustainability. The level of adequacy is understood in terms of being "sustainable," and public service delivery is linked with the current level of taxation and debt limits. Therefore, a local entity is "sustainable" if it can cover demands for public services without increasing taxes or using debt. The different areas to keep under control are service, taxes and debt. If politicians and the managerial class are aware of how these determinants affect financial sustainability, they can define a precise current and future strategy, manage public resources better, and satisfy the citizens' expectations. Both the evaluation and stabilization of financial sustainability value are useful for different aspects; local government credit ratings and solvability assessment are examples of this (Manes

Rossi, 2011). In addition to this is the evaluation of financial equilibrium (Brusca, Manes Rossi, & Aversano 2015).

For an extended period of time, several international organizations (EU, 2012, 2015; IPSASB, 2013) have focused on the importance of financial and fiscal sustainability. These organizations considered the government's ability to deliver public service at the current qualitative and quantitative level, and this guaranteed that financial commitments could be achieved without an excessive increase in public debt (Horne, 1991). Fiscal sustainability is the long - run capability of a government to consistently meet its financial responsibilities. It reflects the adequacy of available revenue to ensure the continued provision of service and capital levels that the public demands (Chapman, 2008). Therefore, the importance of evaluating financial sustainability is related to the capacity to keep public finance under control (European Council, 2011; IFAC, 2013). This ensured an adequate level of transparency in the public sector, considering that the risk of provider failure can increase if changes in public service provision occur (NAO, 2015, p. 9).

The literature has highlighted different perspectives on the concept of financial sustainability, investigating financial sustainability, or condition, or health, and generating an overlap (Bisogno, Cuadrado-Ballesteros, & García-Sánchez, 2017). According to previous studies (Zafra-Gómez, López-Hernández, & Hernández-Bastida, 2009a), sustainability is considered a component of financial condition. Financial condition is comprised of different factors, such as environmental, organizational, and financial factors; it reflects cash-solvency, budgetary solvency, long-run solvency, and service-level solvency (Groves, Godsey, & Shulman, 1981). However, several international organizations and standard setters have opted to refer to financial sustainability as “the ability to manage expected financial requirements and financial risks and shocks over the long term without the use of disruptive revenue or expenditure measures” (PWC, 2006).

In particular, three inter-related dimensions—services, revenue, and debt—comprise financial sustainability (IPSASB, 2013; IFAC, 2013). Public service delivery is linked to welfare needs (Cuadrado-Ballesteros, Mordán, & García-Sánchez, 2014). The service dimension refers to the ability to keep or modify the volume and quality of provided services according to the different levels of revenue and the choice indebtedness levels. As defined by IPSASB (2013), the service dimension expresses the capacity to maintain or increase the quantity and/or quality of public services. Literature (Choi et al., 2008; Navarro et al., 2016) shows that—in terms of quantity and quality—different levels of expenditure determine different levels of service. Therefore, expenditure represents the measurement of the service dimension (Navarro et al., 2016; Schaltegger & Torgler, 2006). Furthermore, it is worth observing what types of services are provided and whether they address a short- or long term perspective. Citizens' demands for the service can be different, considering that this demand often depend on the cultural and political scenario and can change over time. Accordingly, the research questions are as follows:

RQ1: How do the different compositions of expenditure affect financial sustainability?

The availability of the revenue ensures the continued provision of service and capital levels. The different destinations and sources of revenue can constrain the probability of future occurrence (Guillamón, Benito, & Bastida 2011; Rodríguez-Bolívar, Navarro, & Alcaide Munoz, 2014; Navarro et al., 2016). It is crucial to consider the value of each revenue component. The revenue dimension must consider the capacity to maintain taxation levels, increase them, or introduce new revenue sources (IPSASB, 2013; Bisogno, Cuadrado-Ballesteros, & García-Sánchez, 2017). In fact, the current revenue has to be able to satisfy the most important current needs and—in a good scenario—also cover investments with self-sufficient independence to obligations. With higher current revenue comes a higher level of autonomy. While with capital revenue, the local government has to rely on the amount of transfers from the central state or regions, and this amount can change over time. Therefore, current revenue and capital revenue are important components of the revenue dimension (Navarro et al., 2016). The following research question was formulated in relation to this:

RQ2: How do the different compositions of revenue affect financial sustainability?

Composition of the indebtedness dimension plays a crucial role in the sustainability concept. There is a clear link between income statement and debt. To settle excessive amounts of debt a proportion of income is required. the consequence of diverting resources becomes necessary for the provision of services (Navarro et al., 2016). Therefore, on the one hand, it is necessary to achieve the service as citizens expect and demand. However, this level is based on the quantity of revenue. On the other hand and from an intergenerational perspective, excessive recourse to debt does not support the sustainability process, even if citizens can perceive debt-funded projects as less costly than tax-financed ones (Buchanan, 1967). From a fiscal policy point of view, managers often seek to minimize the cost of borrowing when revenue falls short of expenditures (De Mello, 2001). Prior studies

(Zafra-Gómez, López-Hernández, & Hernández-Bastida, 2009b; Rodríguez Bolívar et al., 2016a, 2016b) have thoroughly investigated indebtedness, and it was viewed as a key element of the financial condition of public sector entities. Indebtedness is expressed as the capacity to meet financial commitments or increase debt (IPSASB, 2013). In actuality, the level of debt can define an intergenerational equity, considering the continuous increase of public debt can compromise the ability of future generations in the long term. In particular, the possibility of satisfying current needs should not compromise the ability of future generations to meet their needs (Dollery & Grant, 2011).

To observe the debt dimension, scholars have considered and analyzed different measurements, such as total debt and net debt (Rodríguez-Bolívar, Navarro, & Alcaide Munoz, 2014), financial debt, commercial debt, debts for transfers, and contributions (Rivenbark, Roenigk, & Allison, 2010; Cabaleiro, Buch, & Vaamond, 2013). Therefore, considering the weight of these factors, the following research question was defined:

RQ3: How does the composition of debt affect financial sustainability?

### 3. Method

#### 3.1 Sample Data Collection

The investigation in this study encompassed all Italian local governments (LGs) with more than 60,000 inhabitants. The study focused on larger municipalities. These municipalities were required to provide a greater number of basic public services as opposed to their smaller counterparts. The research analyzed the financial reports of these municipalities for the years of 2017 and 2018, comprising an initial sample of 105 municipalities. Two Italian local governments were excluded on the basis of missing data, leaving a sample of 103 municipalities. The reports with financial and economic data were collected manually through each municipality's website from the "transparent administration" section.

The Italian public context represents a suitable case study for investigating financial sustainability, considering that some financial difficulties have been met in the last decades in the public sector. In particular, these municipalities have suffered financial destabilization caused by an inability to control growing expenditures, as well as static or slow-growing revenue. In Italy, as well as in other countries, the degree of organizational and financial autonomy within these local governments has greatly increased. The harmonization law (decree n. 118 of the year 2011) promoted several reforms with the aim of forming a federal structure (Manes Rossi, 2016, p. 126). Responsibility for financial resources management has shifted from the central government to local authorities. This is due to the decentralization of public finances coupled with a reduction of financial transfers from other levels of governments (Cohen & Karatzimas, 2017). In providing services, municipalities benefit from transfers and grants of both central and regional government origin. Specific taxes are set, and decisions are made on how to spend government resources by approving their own budget within specific legal constraints.

To achieve a harmonized accounting system, Italian local governments adopted accrual accounting and modified cash-basis accounting. It must be noted that an accrual accounting system required only for reporting and cost accounting. There were two different accounting documents: the financial report and the budget. It is worth noting that the budget is based on modified cash-basis accounting, and this serves the function of authorization in regards to *missions* and *programmes* chosen by politicians. Financial reports based on accrual accounting are the results of the financial year. Financial reports include different documents (Manes Rossi, 2016, p. 136), such as the balance sheet, the operating statement, the budget execution statement, and the notes. Other documents were also added to respect the level of transparency.

#### 3.2 Variables' Definition and Measurement

To evaluate how to measure financial sustainability, many international organizations (EU, 2011, 2012; IFAC, 2012, 2014) and prior research (Rodríguez-Bolívar, Navarro, & Alcaide Munoz, 2014; Navarro et al., 2016, 2019) have evidenced that accounting tools can be used to prevent excessive deficits. In addition to this, income statements make it possible to evaluate financial sustainability. The income statement provides useful information for assessing the future ability of governments to continue providing services with a maintained level of quality; this is crucial considering that it is the main feature of long-term fiscal sustainability (IFAC, 2012). It is possible to link income statements to financial sustainability due to its use of accrual criteria. Differentiated by budget data, accrual-based information considers the consumption of capital investments, estimates of future costs, and expenses gained, with pending allocation to the budget. A public organization can understand the evolution of its financial items in the future (Navarro et al., 2016). Consequently, the study follows the recommendations of the main international organizations (EU, 2012) and the pronouncements of international accounting bodies, such as IFAC (2012), FASB (2012) and GASB (1990), as well as prior research

(Rodríguez-Bolívar, Navarro, & Alcaide Munoz, 2014; Navarro et al., 2016, 2019) in order to measure financial sustainability.

Therefore, based on accrual data and looking at income statements, financial sustainability is measured with an “adjusted income statement”. From the results of the income statement for the financial year, the negative components for extraordinary activities are added, while the positive components for extraordinary activities are subtracted. The reason for correcting the value of the income statement is that the new value is a more reasonable measure of intergenerational equity, and it is closer to the concept of financial sustainability (Rodríguez-Bolívar, Navarro, & Alcaide Munoz, 2014). In fact, scholars (Norgaard, 1992) have highlighted the necessity of incorporating the effects of different levels of intergenerational transfers on efficiency in the allocation of resources. Regarding the independent variables, the study considered the three dimensions defined by the literature (IPSASB, 2013): revenue, debt, and services.

The revenue dimensions must consider the capacity to maintain or increase taxation levels or to introduce new revenue sources (IPSASB, 2013; Bisogno, Cuadrado-Ballesteros, & García-Sánchez, 2017). Therefore, it can be expressed as current revenue and capital revenue. The current revenue comprises all the resources available to local governments for two purposes: the financing of annual management and the provision of public services.

According to Italian regulations, current revenue comprises three categories: tax revenue, current contributions and transfers, and non-tax revenue. Tax revenue consists of municipal revenue derived from the collection of taxes. They constitute the so-called financial autonomy of a municipality, or its ability to independently provide for the financing of expenditure. Current transfers are sources of revenue derived from contributions and transfers by third parties. Current transfers measure the degree of a municipality’s financial dependence with respect to external entities. They comprise, for example, current contributions and transfers from the national government, the region, the European Union and international organizations, and other public sector entities. Lastly, the third category includes revenue that is not directly related to the collection of taxes. This revenue includes, in particular, revenue from public services and entity assets, advance and credit interest, net profits of special and investee companies, company dividends, and other revenue. Capital revenue comprises revenue resulting from the sale of municipality real estate, or any transfers by the state for the building of infrastructures or other long-term projects, and the collection of accumulated credits.

In the debt dimension, the analysis takes into account references by the International Monetary Fund (IMF, 2007), the Canadian Institute of Chartered Accountants (CICA, 2009), and the International Federation of Accountants (IFAC, 2013), according to which debt is calculated per capita. Referring to the literature, the focus is on a different degree of the value of debt per capita; total debt, commercial debt, financial debt, and debts for transfers and contributions are investigated (Rivenbark, Roenigk, & Allison, 2010; Cabaleiro, Buch, & Vaamond, 2013).

In regards to the service dimension, as stated previously, expenditure represents its measurement (Navarro et al., 2016; Schaltegger & Torgler, 2006). Thus, current and capital expenditures were investigated. Current expenses are those incurred to ensure that the local government can function. For this reason, this is defined as a recurring expense. In particular, they comprise expenses for employment, taxes to be paid by the entity, purchase of goods and services, current transfers, tax transfers (solely applies to regions) equalization funds (solely applies to regions) interests, other expenses for property income, refunds and corrective items of revenue, and other current expenses.

Capital expenditure consists of all the expenses that the municipality incurs to make investments. It comprises capital contributions paid by the institution, gross fixed investments and land purchase, contributions to investments, other capital transfers, and other capital expenditures.

Table 1 syntactically shows the variables.

Table 1. Description of variables

Variables	Acronym	Description
<b>Dependent</b>		
Financial Sustainability	FS	Income Statement Adjusted = income statement – extraordinary revenue + extraordinary expenses
<b>Independent</b>		
Current Revenue	<i>CurRev</i>	Tax revenue + Current contributions and transfers + Non-tax revenue
Capital Revenue	<i>CapRev</i>	Revenue from sales of assets + Transfers in capital account
Current Expenditure	<i>CurExp</i>	Expenses for employment + Taxes and fees payable of the LG + Purchase of goods and services + Current transfers + Interest expense + Other expenses for income from capital + Refunds and postage corrective revenue + Other current expenses
Capital Expenditure	<i>CapExp</i>	Capital contributions payable by the institution + Gross fixed investments and purchase of land + Contributions to investments + Other expenses in capital account
Debt	<i>Debt</i>	Total debt divided by the number of residents
Financial Debt	<i>Fin_Deb</i>	Debt from financing by: bond loans + other public administrations + to banks and treasurer + to other lenders. The sum of these values is divided by the number of residents
Commercial Debt	<i>Comm_Deb</i>	Debt to suppliers divided by number of residents
Debts for transfers and contributions	<i>Trans_Deb</i>	Debt for transfers and contributions by: entities financed by the national health service + other public administrations + subsidiaries + investee companies + other subjects. The sum of these values is divided by number of residents
Geographic	<i>geo</i>	Dummy variable. 1 for central and southern Italy, 2 otherwise.

### 3.3 Regression Model

Considering data characteristics and relationships, the Random-Effect Model is the model of choice for this study. Considering that it allows for modeling heterogeneity across units, it is the most appropriate model to use in this case. This is particularly true given that the study has larger between effects than within effects. Furthermore, to control unobserved heterogeneity and support the authors' choice, the Hausman test was carried out to choose between two estimation techniques: fixed-effects (FE) model or random-effects (RE) model. The test identifies whether there is a correlation between the unique errors and regressors in the model. The results showed that the RE model was preferred.

To test the hypotheses of this study, the following basic model was constructed:

$$FS_t = \beta_0 + \beta_1 CurRev_{it} + \beta_2 CapRev_{it} + \beta_3 CurExp_{it} + \beta_4 CapExp_{it} + \beta_5 Deb_{it} + \beta_6 Fin\_Deb_{it} + \beta_7 Comm\_Deb_{it} + \beta_8 Trans\_Deb_{it} + \beta_9 geo + u_{it} \quad (1)$$

In regards to the above model, sub-indexes *i* and *t* refer to each LG and year, respectively. The error  $u_{it}$  is composed for  $a_i$  (unobservable heterogeneity), proposed to measure unobservable characteristics of the local governments with a significant impact on financial sustainability, and  $\varepsilon$  as the error term. There have been no previous studies on the possible endogeneity of the explanatory variables with financial sustainability (Navarro et al., 2016).

## 4. Results

Table 2 shows the descriptive statistics for all variables.

Table 2. Descriptive statistics

Variable		Mean	Std. Dev.	Min	Max
FS	overall	8683689	1.86e+08	-3.67e+08	2.45e+09
	between		1.31e+08	-1.89e+08	1.24e+09
	within		1.30e+08	-1.20e+09	1.22e+09
CurRev	overall	2.49e+08	5.88e+08	2.65e+07	5.06e+09
	between		5.85e+08	3.95e+07	4.95e+09
	within		3.02e+07	6.71e+07	4.31e+08
CapRev	overall	3.75e+07	1.37e+08	683107	1.75e+09
	between		1.19e+08	1392906	1.09e+09
	within		6.69e+07	-6.17e+08	6.92e+08
CurExp	overall	2.60e+08	6.53e+08	677379.6	4.42e+09
	between		5.77e+08	1.09e+07	4.33e+09
	within		2.73e+08	-1.83e+09	2.35e+09
CapExp	overall	4.41e+07	1.26e+08	149419.5	1.13e+09
	between		9.76e+07	709546.9	5.93e+08
	within		7.89e+07	-4.94e+08	5.82e+08
Deb	overall	3.532.764	10484.71	.0327099	139188.6
	between		7.332.096	2.372.582	70031.62
	within		7.282.991	-65624.19	72689.72
Fin_Deb	overall	808.8375	806.9546	.080511	4.028.615
	between		795.8857	.080511	3.972.458
	within		138.8926	160.4673	1.457.208
Comm_Deb	overall	347.6698	294.2744	.6347781	1821.23
	between		288.0421	2.22495	1380.04
	within		112.1093	-282.3663	977.7059
Trans_Deb	overall	196.5145	1.184.255	.156273	14535.43
	between		861.4262	.156273	7.281.394
	within		811.7317	-7057.52	7.450.549

The mean value of financial sustainability was sufficiently high. The current revenue presented a greater value mean than capital revenue. Regarding expenditure, the mean value of the current expense was greater than that of capital expense. It is important to note that the mean value of current expenditure was slightly higher than that of current revenue. These two values differed marginally, but it is important to recognize this sign, as it can indicate the first warning of decline in the health of public administrations management. In a positive scenario, the value of current revenue was also able to cover current expenses. The same evidence was observed for capital expenses and capital revenue. The former was slightly higher than the latter. In general terms, the total value of expenditure was not covered by the total value of revenue.

Observing the values of debt, the total debt was sufficiently high. In particular regards to the debt area, the value of financial debt was highest. This was followed by commercial debt and debt for transfers and contributions, which represented a smaller portion. This suggests that local administrations have long begun to resort to financial debt. Considering the variables with more dispersion (standard deviation) and the uniformity of the behavior of the variables in all observations (overall), current expenditure and current revenue presented a high standard deviation. Meanwhile, the variable with less dispersion was debt.

The table also shows the standard deviations “between” and “within” subgroups. In the trend line, the values “between” and “within” following “overall” did not register a discrepancy. The analysis highlights the mean value of each component of financial sustainability for the years of 2017 and 2018. Figure 1 visibly demonstrates the different trends in the two years of observation. In the case of financial sustainability value, the results present a negative assessment in 2017 and a positive assessment in 2018. The mean value for current and capital revenue maintained its progress. The trend in current expenses showed an important scenario. A very high value was noted in 2017, whereas a visible decrease occurred in 2018. As Figure 1 reveals despite the decrease in current expense, it was still higher in value than current revenue. The same trend could be seen for capital expenditure; although smaller, there was only a slight decrease from 2017 to 2018. The second part of Figure 1 shows the mean value of the debt, financial and commercial debt, and the debt for transfers and contributions. A closer examination showed that the amount of mean debt was very high in 2017, while there was a strong cutback in 2018. Following this event, there was a tendency to stabilize the remaining values: financial debt, commercial debt, and debts for transfers and contributions.

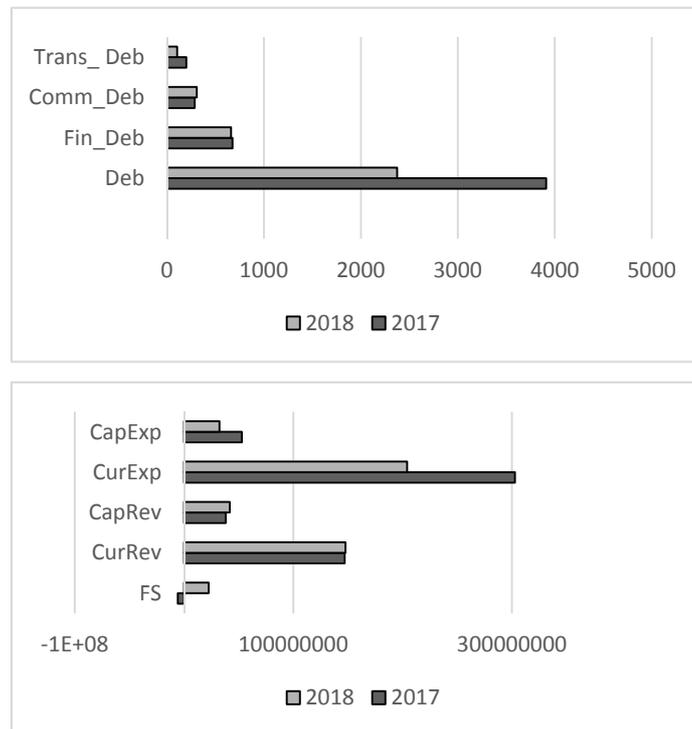


Figure 1. Components of financial sustainability: comparison of years 2018 and 2017

In conclusion, it is possible to highlight a different scenario in the two years. In 2017, there were negative parameters, unbalanced measurements, expenses that far exceeded revenue, and a very high value for debts. Then, the outcome changed in 2018 with a decrease in expenses and the value of debt.

Table 3. Random effects estimation

FS	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig.
geo	-15661505	35967132	-0.44	.663	-86155789	54832779	
CurRev	.787	.289	2.72	.006	.221	1.354	***
CapRev	-.717	.25	-2.86	.004	-1.207	-.226	***
CurExp	-1.001	.326	-3.07	.002	-1.64	-.361	***
CapExp	1.908	.563	3.39	.001	.805	3.012	***
Deb	14353.411	5790.049	2.48	.013	3005.124	25701.698	**
Fin_Deb	-16854.291	26863.442	-0.63	.53	-69505.67	35797.089	
Comm_Deb	-145166.92	77662.381	-1.87	.062	-297382.39	7048.551	*
Trans_Deb	112110.18	68519.484	1.64	.102	-22185.538	246405.9	
Constant	20229264	65464906	0.31	.757	-1.081e+08	1.485e+08	
Mean dependent var		11804586.231				212017292.239	
Overall r-squared		0.169				151.000	
Chi-square		28.776				0.001	
R-squared within		0.148				0.173	

Note. \*\*\* p<.01, \*\* p<.05, \* p<.1.

Table 3 shows the regression analysis following random effects estimation. The results highlight that current revenue and capital revenue were statistically significant at a level of 1%. The current revenue positively influenced financial sustainability, whereas the influence of the capital revenue coefficient was negative. Additionally, current and capital expenditures were statistically significant at a level of 1%. Observations on coefficients in this case are also worth noting. Current expenditure presented a negative coefficient, whereas capital expenditure had a positive influence on financial sustainability. Focusing on the debt area, the values of total debt and commercial debt were statistically significant at levels of 5% and 10% respectively. Financial debt and debts for transfers and contributions were not statistically significant, nor was the constant value. It is

interesting to note that geographical differences in the Italian context did not influence financial sustainability.

These results are remarkable and unexpected; the varying composition of each area presents a thought-provoking scenario worthy of further investigation.

## 5. Discussion and Conclusion

This study investigated the three dimensions of financial sustainability proposed by the IFAC: service, revenue, and debt. The aim was to understand how the different components of service, revenue, and debt can influence financial sustainability. Under the lens of the goal-setting theory, an evaluation was carried out on information pertaining to different components of financial sustainability.

According to the goal-setting theory, managers can define plans and perform better with specific and detailed accounting information. In this study, the aim was to achieve an adequate level of financial sustainability for the betterment of Italian local government financial health. For a long period of time, there was a necessity to have appropriate tools to evaluate the financial situation (Cabaleiro, Buch, & Vaamonde, 2013). There was also a need to achieve sustainable economic development in local governments. Based on empirical analysis of larger Italian local governments in 2017 and 2018, a regression model was constructed. This model aimed to discover how the financial sustainability of Italian local governments is affected by specific components of revenue (expressed by the level of current and capital revenue), service (the level of current and capital expense), and indebtedness (namely, financial debt, commercial debt, debts for transfers and contributions, and total debt).

In the revenue dimension, the result showed that current revenue had a positive impact on financial sustainability. Surprisingly, capital revenue negatively influenced financial sustainability. This result suggests that public managers should rely mainly on resources of internal origin. Hence, the central concept could be based on evaluations of autonomy in recent years, the autonomy of local governments has increased remarkably (Boetti, Piacenza, & Turati, 2012). To achieve an autonomous status, local governments must develop competencies and responsibilities to pursue a management strategy with the aim of practicing efficiency and effectiveness. With higher revenue from fees and taxes (i.e., citizen's contributions), there is a higher responsibility on the local government (Narbón - Perpiñá & De Witte, 2018). Previous literature (Greenberg & Hiller, 1995; CICA, 1997, 2009) considers the concept of "vulnerability"—the capacity of being dependent on external financing resources—as relevant for financial sustainability. Therefore, to achieve better results, policymakers must know the pertinent information to exercise proper measurement of vulnerability (Navarro et al., 2016). It also must be predicted for the future, considering that revenue is one of the variables with greater dispersion between years (Navarro et al., 2016).

In the service dimension, the results evidenced that current expenditure presented a negative coefficient, whereas capital expenditure positively influenced financial sustainability. One possible interpretation of the different effects of expense can be derived from an excessive—and therefore, unsustainable—use of current expenditure. In fact, a negative balance in the value of financial sustainability implies either an inevitable reduction of the volume and/or quality of goods and services, or the need to gain new funds to finance expenditures (Navarro et al., 2016). In contrast, a positive impact represents a good situation in which the quantity and quality of provided services are in an "equilibrium area". This is the case in regards to capital expense. The results confirmed an excessive expense in providing services, reducing financial sustainability. Therefore, the findings from this study have the potential to provide managers with sufficient insight and understanding of the borderline necessary to stay in an equilibrium area and gain proper financial sustainability.

On further examination of financial sustainability in the Italian context, a slight imbalance in values was present. The measurements of expense value were always greater than those of revenue. According to Italian law, public entities must respect the value of equilibrium for both current and capital management. However, a pathological scenario is exhibited, revealing that more than the allotted revenue was spent.

In regards to indebtedness, results underlined that not all components of the debt area affected financial sustainability. For example, debt origin (financial or commercial or for transfers) was not connected with the evolution of financial sustainability. Furthermore, it is worth noting that the Italian context showed a reversal trend during the two years in question. In the second year, there was a drastic reduction in both current expenses and the total value of debts. Given that these are current expenses, a significant question is posed: how is it possible to obtain such a drastic reduction in such a limited amount of time? The answer lies in the management and its drive to seek a more balanced value of financial sustainability. Thus, this result suggests that in the span of time between those years, an excessive waste of resources transformed into a reduction of essential services.

This study is potentially relevant and significant in a national but also international context, and this specifically

applies in the context of local governments. It adds new elements to the literature on financial health in the public sector. The study also emphasizes the relevance of different components and how they impact financial sustainability. These findings have the potential to be particularly useful for policymakers and managers. Better understanding can be provided to these individuals regarding necessary elements to control, which can help to guarantee a proper financial sustainability to the current and future generation. According to the literature, accounting detail knowledge supports the public entity in assessing its ability to continue providing the same quantity of goods and services; it takes into consideration the level of resources considered to be indispensable to these public services for future generations (IFAC, 2012). It must also attempt to simultaneously maintain at least the same level of quality if not higher. Knowledge of the accounting details allow for the obtaining and maintaining of financial sustainability. For this reason, it is of great interest for different categories of accountability-responsible stakeholders such as accountants, supervisory bodies, fiscal authorities, voters, and users of public services.

As stated previously, in the case of Italian local governments, the analysis based on the income statements provided relevant information on the dimensions of financial sustainability. There is evidence of several critical thresholds that public managers stay within to avoid a situation of unsustainable management.

The research is not free of limitations. This study covered the span of a mere two years (2017 and 2018), as accrual accounting was used as a criterion for drawing financial statements in Italy. Therefore, for future development, it would be necessary to increase the time analysis. Furthermore, the European Union is currently injecting liquidity into public entities in order to cope with the health crisis caused by the COVID-19 pandemic. Taking this into consideration, further investigation into the evolution of financial sustainability—and whether these accounting measurements will change over time—could prove invaluable.

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