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Tesis Doctoral

FINANCIAL AND NON-FINANCIAL SUSTAINABILITY IN SPANISH LOCAL GOVERNMENTS

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FINANCIAL AND NON-FINANCIAL SUSTAINABILITY IN SPANISH LOCAL GOVERNMENTS

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Gracias mamá.

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RESUMEN

Una nueva era financiera ha comenzado para todos los niveles de administración, incluidos los gobiernos locales, basada en un principio universalmente aceptado: la sostenibilidad. Los procesos de control de la condición financiera en los gobiernos locales y el aumento de la demanda de transparencia tras la crisis financiera de 2008 y la crisis del COVID-19 han surgido como mecanismos para asegurar la sostenibilidad. La definición más amplia de sostenibilidad afirma que ser sostenible es algo que se puede mantener durante mucho tiempo sin agotar los recursos ni causar graves daños al medio ambiente[1]. La Unión Europea (UE) también ha elegido la sostenibilidad financiera como herramienta para evaluar la condición fiscal de los países que pertenecen a la Eurozona estableciendo los requisitos que regulan los límites de déficit y deuda de los gobiernos, mediante la reforma del acuerdo del Pacto de Estabilidad y Crecimiento en 2011 con el fin de garantizar la estabilidad de la Unión Económica y Monetaria.

El Pacto de Estabilidad y Crecimiento define el proceso para el seguimiento y consecución de las reglas fiscales de los Estados miembros, así como el mecanismo aplicable en caso de que un estado incumpla sus condiciones, a través de la adopción del *procedimiento de déficit excesivo* con medidas correctoras en caso de superar el déficit presupuestario permitido por la UE. Como consecuencia de la crisis del COVID-19, en 2020, se activó la llamada *cláusula de escape general* dentro del Pacto de Estabilidad y Crecimiento para el período 2020-2022. Ello ha permitido a los estados miembros alejarse temporalmente de los requisitos presupuestarios exigidos en el marco presupuestario europeo. La *cláusula de escape general* implica que, si bien no hay consecuencias para las entidades cuando se produce un incumplimiento de las reglas fiscales, sí que se debe continuar presentando la información según lo indicado en el cronograma de rendición de los informes. En el contexto europeo, el principal reto del Pacto Verde Europeo (Green Deal) es convertir a la UE en una economía moderna, competitiva y eficiente en el uso de los recursos.

La sostenibilidad financiera de los gobiernos locales, se relaciona con el término de riesgo financiero cuya definición adquiere múltiples términos tales como: situación financiera (Mead, 2001), salud fiscal (Hendrick, 2004), estrés fiscal (Kloha *et al.*, 2005)

[1] Definición basada en el diccionario de la Real Academia Española

o salud financiera (Zafra Gómez *et al.*, 2009). Son ejemplos de conceptos con un significado similar utilizados por autores, gobiernos o instituciones, y que se han puesto de moda internacionalmente en los últimos años (Zafra Gómez *et al*., 2009). Todos estos términos están relacionados a su vez con indicadores que pretenden evaluar la situación financiera.

Los gobiernos centrales han desarrollado mecanismos legales para controlar la sostenibilidad de las actividades de los órganos administrativos. Según Bethlendi *et al*. (2020), la normativa pretende mejorar el concepto de presupuestación de manera apropiada y fortalecer las herramientas de control. La novedosa gestión de la sostenibilidad ha dado lugar a la implementación de requisitos legales en muchos países, que persiguen la reducción del gasto y de la deuda del sector público, transformando el modo en que los gobiernos implementan sus políticas de prestación de servicios públicos (Zeemering, 2018). Tommasetti *et al.* (2020) señala que las organizaciones del sector público se enfrentan actualmente a un escenario caracterizado por la necesidad de supervisión fiscal con una reordenación exhaustiva de la asignación de recursos públicos. La falta de regulación en materia de sostenibilidad financiera ha contribuido en parte a desencadenar la crisis financiera mundial (Moschella y Tsingou, 2013), promoviendo la adopción de nuevas medidas legislativas por parte de los gobiernos con el fin de mejorar la gestión de estos gobiernos (Meneguzzo *et al.*, 2013). Los sistemas de rendición de informes son por lo tanto, un ejercicio para mostrar la transparencia y alcanzar una mayor eficiencia y eficacia (Hermosa *et al.*, 2021) de las actividades de la Administración para garantizar la sostenibilidad. Además, los derechos de acceso e información han sido garantizados por la ley, algo que también ha fomentado la exigencia de la transparencia involucrando a la participación ciudadana (Monfardini, 2010). La presentación de informes y su divulgación se han convertido en el gran reto de la Administración Pública como medio para lograr la sostenibilidad financiera y no financiera. Monfardini *et al.* (2013) indica que la divulgación se considera una poderosa herramienta legitimadora, estrechamente relacionada con la rendición de cuentas. Los desarrollos legislativos y los calendarios de presentación de informes han llevado a que la actividad principal de los secretarios-interventores sea la presentación de información tanto financiera como no financiera. La mayor parte de la legislación sobre sostenibilidad no solo define qué es la sostenibilidad, sino que también

proporciona mecanismos de alerta para prevenir situaciones de inestabilidad. Uno de los mecanismos utilizados para controlar la salud financiera de los gobiernos locales es el *benchmarking*. En este sentido, el *benchmarking* identifica la *autogestión local voluntaria*, sin intervención alguna del Estado, la *gestión jerárquica obligatoria*, en la que el diseño de los indicadores de comportamiento se lleva a cabo bajo la supervisión del gobierno central, y una *gestión coordinada verticalmente* con cooperación entre el gobierno central y los gobiernos locales (Kuhlmann y Jäkel, 2013). Además, en la presentación de informes financieros la contabilidad proporciona el mecanismo que permite cumplir con la responsabilidad financiera (Ruggiero *et al.*, 2021). Como resultado, se han desarrollado diferentes sistemas de indicadores, como el Global Reporting Initiative (GRI), fundado en 1997, o el Financial Trends Monitoring System (FTMS), desarrollado por la International City/County Management Association (ICMA). La existencia de un modelo de rendición de cuentas basado en indicadores GRI puede mejorar la comparación entre países (Hermosa *et al.*, 2019). Los indicadores universalmente aceptados que evalúan la sostenibilidad muestran no solo cuál es la situación financiera, sino también cuál es la situación en otras áreas como la social y la ambiental. En esta línea, en 2013 se desarrolla el Informe Integrado sobre información no financiera como un informe estándar universalmente aceptado y define un marco teórico formulado por el Consejo Internacional de Informes Integrados (IIRC) para los sectores público y privado. La última versión de este informe es de 2021 y su objetivo es promover un enfoque cohesivo de la información. Biondi *et al*. (2018) afirman que la presentación de información no financiera complementa la información financiera y Tylec (2020) apoya el uso de información no financiera para aumentar la efectividad de la gestión de los gobiernos. Sin embargo, algunos autores creen que es necesario reforzar el desarrollo de la información no financiera porque no es lo suficientemente comparable dado que las corporaciones no reportan toda la información que los usuarios consideran esencial (La Torre, 2020). La adopción de la Directiva 2014/95/UE del Parlamento Europeo y del Consejo permite crear el escenario principal en materia no financiera reforzando el compromiso medioambiental.

En investigaciones previas hay autores que se han dedicado a buscar la mejor herramienta que defina el concepto de sostenibilidad mediante la evaluación de indicadores financieros. Kaldani *et al.* (2016), Gerrish y Spreen (2017) y Trussel y Patrick (2018) utilizan indicadores relacionados con la deuda y la deuda per cápita,

mientras que Robbins *et al.* (2016) utilizan indicadores que vinculan la deuda con los ingresos y los activos. Otros investigadores, como Navarro Galera *et al.* (2015), han construido un modelo basado en la probabilidad de impago según los requisitos de Basilea II y han estudiado el impacto de las variables socioeconómicas en la deuda de los gobiernos locales.

El marco normativo de esta Tesis Doctoral se centra en la legislación transpuesta al ordenamiento jurídico español en relación con los requisitos de sostenibilidad de la UE. Con respecto a la sostenibilidad financiera, el gobierno de España modificó el artículo 135 de la Constitución Española y posteriormente se desarrolló el mandato mediante la aprobación de la Ley Orgánica 2/2012, de 27 de abril, de Estabilidad Presupuestaria y Sostenibilidad Financiera. Esta ley define un mecanismo de *rendición de información* que proporciona un cronograma para evaluar la situación financiera de los gobiernos locales y así monitorizar su sostenibilidad financiera. La Orden HAP/2105/2012, establece el calendario de obligaciones de suministro de información previstas en la Ley Orgánica de Estabilidad Presupuestaria y Sostenibilidad Financiera. La nueva legislación implica una doble obligación: cumplir con los indicadores financieros y divulgar esa información periódicamente. De acuerdo con la Ley Orgánica de Estabilidad Presupuestaria y Sostenibilidad Financiera, todas las entidades del sector público español deben cumplir los siguientes principios: estabilidad presupuestaria, sostenibilidad financiera, plurianualidad, transparencia, eficiencia en la asignación y utilización de los recursos públicos, responsabilidad, lealtad institucional y aplicación efectiva de la ley y mecanismos de coordinación. A su vez, esta ley también define varios indicadores que conforman las reglas fiscales esenciales: estabilidad presupuestaria, regla del gasto, deuda pública y período medio de pago. Los gobiernos locales tienen que informar sobre estos indicadores que evalúan la estabilidad presupuestaria y la sostenibilidad financiera en distintos momentos del año. La información financiera se envía y se muestra públicamente en la web del Ministerio de Hacienda titulado "Oficina virtual para la coordinación financiera de las entidades locales", utilizando la taxonomía XML. Además de estos indicadores, la nueva versión la Instrucción del modelo normal de contabilidad local (Orden HAP/1781/2013, de 20 de septiembre) amplió en 2013 los indicadores requeridos en el punto 25 del apartado

notas de las Cuentas Anuales, estableciendo otro conjunto de indicadores de carácter financieros, presupuestario y de activos.

El mandato legal sobre información no financiera que recoge la Directiva 2014/95/UE ha sido introducido en España mediante la adopción de la Ley 11/2018 en materia de información no financiera y diversidad. La principal innovación de esta ley es la definición del Estado de Información No Financiera (EINF) que debe ser preparado de manera obligatoria por las corporaciones que cumplan ciertos requisitos. Este informe debe contener información sobre determinadas cuestiones, como el medio ambiente, cuestiones sociales y de personal, el respeto de los derechos humanos, la lucha contra la corrupción y el soborno y la sociedad de la información. Junto a esta ley, la Asociación Española de Contabilidad y Administración de Empresas (AECA) ha desarrollado un modelo de información integrada para la elaboración de este informe. El modelo comprende el Cuadro Integrado de Indicadores (CII) que incluye tanto información financiera como información sobre asuntos Ambientales, Sociales y de Gobierno Corporativo (FESG). La Ley y la Directiva no definen un conjunto de indicadores que sirvan de guía para su elaboración, sin embargo, el modelo CII-FESG define una serie de indicadores clave (KPI) sobre conceptos no financieros, lo que permite a las corporaciones preparar con detalle el EINF. La propuesta de AECA se considera un modelo generalmente aceptado para las normas contables en España, que además es nombrado en la propia ley como referente a seguir.

El estudio sobre gobiernos locales nos ha permitido analizar la situación financiera en el tercer nivel de la Administración española. El objetivo principal de los gobiernos locales es la prestación de servicios públicos y garantizar un nivel mínimo de servicios en función del tamaño de la población. La obligatoriedad de rendición de informes periódicamente ha respaldado y reforzado la labor del secretario-interventor. Desde 2013, es posible evaluar la situación financiera, permitiendo evitar situaciones de inestabilidad y aplicar acciones correctivas que son capaces de redirigir la gestión de gobiernos locales.

El objetivo de esta Tesis Doctoral es analizar la sostenibilidad de la Administración Local española en la prestación de servicios a través de la presentación y rendición de la información financiera y no financiera. Las preguntas de investigación sobre sostenibilidad financiera de este trabajo son: conocer cuál es el efecto de las iniciativas

legislativas del gobierno español adoptadas para lograr la sostenibilidad y si los indicadores financieros españoles son fiables para evaluar la sostenibilidad financiera. En el caso de la sostenibilidad no financiera se ha realizado un estudio a través del análisis de la información no financiera reportada por las sociedades mercantiles municipales.

Esta Tesis Doctoral se organiza en dos apartados, el primero relativo al estudio de la sostenibilidad financiera y el segundo relativo al análisis de la sostenibilidad no financiera. La primera sección incluye los capítulos 1 y 2. El objetivo del Capítulo 1 es analizar la eficacia de la legislación sobre la salud financiera de las Administraciones Locales españolas, bajo los enfoques del isomorfismo y la mejora. El segundo apartado incluye el Capítulo 3, que analiza la información y sostenibilidad no financiera divulgada por las sociedades mercantiles municipales de España obligadas a rendir este tipo de información. La contribución innovadora de esta Tesis Doctoral consiste en el análisis de la sostenibilidad de la Administración Local española desde la perspectiva no solo de la información financiera, sino también de la no financiera.

Sección uno

El objetivo del Capítulo 1 es analizar la eficacia de la regulación de la salud financiera en las administraciones locales españolas. Para ello, se estudia el efecto de la implementación de los nuevos requisitos legales e indicadores que adopta el gobierno central con respecto a la estabilidad fiscal y el equilibrio presupuestario con el fin de mejorar la salud financiera de los gobiernos locales. La nueva normativa crea un doble requisito: el cumplimiento de la sostenibilidad financiera y la divulgación de esta información. El objetivo de este capítulo es analizar el efecto de la divulgación de los indicadores definidos en la Ley Orgánica de Estabilidad Presupuestaria y Sostenibilidad Financiera y de la Instrucción del modelo normal de contabilidad local sobre la salud financiera de los gobiernos locales, comparando la situación financiera de los gobiernos locales antes y después de su implementación. Siguiendo a Gerrish y Spreen (2017), la metodología utilizada es la aplicación de un modelo de regresión lineal para cada uno de los indicadores bajo los enfoques de isomorfismo y de mejora[2]. La evidencia del

[2] El isomorfismo se considera un proceso restrictivo que obliga a una unidad a parecerse a otras unidades con el mismo conjunto de condiciones ambientales (Hawley 1968). Las instituciones tienden a adoptar el

isomorfismo justifica la necesidad de introducir requisitos legales para garantizar que todos los indicadores alcancen los valores mínimos exigidos por la ley. Estas diferencias pueden explicarse por el efecto de la tendencia hacia la media provocada por la divulgación de información, haciendo posible la comparación entre gobiernos y dando lugar a mejoras en la situación de las entidades con peor salud financiera.

El objetivo del capítulo 2 es evaluar la fiabilidad de la medición de la sostenibilidad financiera en el caso de los gobiernos locales españoles. Los gobiernos locales han reforzado el control financiero como consecuencia de los requisitos legales para garantizar la sostenibilidad financiera. La pregunta de investigación de este estudio se centra en determinar si los indicadores sobre salud financiera adoptados en la legislación española están en línea con los indicadores generalmente aceptados a nivel mundial. Es por ello que analizamos la relación entre los indicadores españoles de sostenibilidad financiera basados en la normativa de la Unión Europea (UE) y los indicadores incluidos en el Financial Trend Monitoring System (FTMS) desarrollados por la International City/County Management Association (ICMA). Para cada gobierno local se han calculado los indicadores ICMA y se han estudiado los indicadores españoles para el periodo 2010 a 2017. En este capítulo se aplican dos metodologías: el análisis discriminante y la regresión logística. Los indicadores que mejor describen el contenido de la transposición de los requisitos financieros de la UE a la legislación española de los gobiernos locales son *Ingresos per cápita* e *Ingresos por déficits o superávits*, *Gastos per cápita, Déficit o superávit de explotación, Pasivo corriente* y *Deuda a largo plazo*. La evidencia demuestra que la evaluación de la condición financiera está relacionada con los ingresos (estabilidad presupuestaria), con el gasto (regla del gasto) y con la deuda (deuda pública). Por tanto, los indicadores españoles son congruentes con los indicadores ICMA y con la literatura previa. Como resultado, este artículo proporciona dos contribuciones al ámbito de la sostenibilidad financiera: en primer lugar, los indicadores financieros españoles están en línea con la evaluación aceptada a nivel mundial y, en segundo lugar, se proporciona un modelo que permite a

isomorfismo como una fuerza poderosa que fomenta la imitación (DiMaggio & Powell, 1983), debido al isomorfismo mimético. El enfoque de mejora, considera que el uso de benchmarking puede redirigir la situación financiera de los gobiernos locales porque se pueden comparar las etapas financieras a lo largo del tiempo y recibir información adicional que ayuda a la toma de decisiones (Ammons y Rivenbark, 2008; Rivenbark y Roenigk, 2011; y Ammons y Roenigk, 2014).

otros países probar su propio mecanismo de evaluación de la situación financiera con respecto a los estándares de evaluación generalmente aceptados en todo el mundo.

Sección dos

El capítulo 3 se centra en la información no financiera proporcionada en las sociedades mercantiles municipales españolas en virtud de la Ley 11/2018 de información no financiera y diversidad. Particularmente, se analiza el Estado de Información No Financiera (EINF) en este tipo de sociedades. El objetivo de este trabajo es analizar las opiniones de los expertos que han llevado a cabo los primeros EINF con el fin de determinar la utilidad de esta información y su futura contribución a la mejora de los procesos de toma de decisiones. Para la consecución de los objetivos de este capítulo, se han revisado los informes rendidos por las sociedades mercantiles municipales que están bajo el ámbito subjetivo de la ley, homogeneizando la información contenida en estos a través de la aplicación del Cuadro Integrado de Indicadores sobre asuntos Ambientales, Sociales y de Gobierno Corporativo (CII-FESG) elaborado por la Asociación Española de Contabilidad y Administración de Empresas (AECA) que ofrece un conjunto de indicadores no financieros apoyando la elaboración el EINF de forma detallada. Aplicando el método Delphi, los resultados muestran, que existe un alto nivel de rendición de este tipo de información, especialmente en la referente a la tipología social. Además, los expertos están de acuerdo en que la divulgación del EINF tiene como fin mostrar una mejora en la imagen de las actividades realizadas por la sociedad municipal, enriqueciendo la información proporcionada a los ciudadanos. En esta línea, uno de los futuros retos del EINF es la posibilidad de hacer que este informe sea comparable entre años y entidades similares. Una nomenclatura y un contenido comunes permitiría comparar la información no financiera. Sobre la tipología de indicadores, la evidencia muestra que la utilidad de los indicadores Ambientales y Sociales es alta mientras que la dificultad para elaborar los indicadores es baja-media. Sobre los Indicadores de Gobierno Corporativo, los expertos coincidieron en que la utilidad de estos indicadores es medio-alta, sobre todo en los referentes a información sobre los consejeros y la diversidad de género. Este estudio sirve como ejemplo que puede ser examinado por otros organismos públicos y por aquellas las entidades locales que probablemente se verán obligadas a incluir este

informe en un futuro próximo, así como para los responsables políticos y demás organizaciones del sector público.

SUMMARY

A new financial era has commenced for all layers of administration, including Local Governments (LGs), being based on a universally accepted principle: sustainability. The control process reviewing the financial condition of LG and demands for transparency after the global financial crisis in 2008 and the COVID-19 crisis have emerged to ensure sustainability. The broader definition of sustainability states that being sustainable is something which can be maintained for a long time without depleting resources or causing serious damage to the environment[3].

The European Union (EU) has also chosen financial sustainability as a tool to track the fiscal condition of countries that belong to the Eurozone, establishing requirements and setting the limits for government deficit and debt, and bringing about reform to the Stability and Growth Pact in 2011 in order to ensure the stability of the Economic and Monetary Union. The Stability and Growth Pact establishes the due process for monitoring the fiscal conditions of State members. The Stability and Growth Pact includes procedures when a member breaches the SGP, with the adoption of an Excessive Deficit Procedure requiring corrective actions in the case of exceeding the budget deficit allowed by the EU. In 2020, the *general escape clause* within the Stability and Growth Pact was activated as a consequence of the COVID-19 crisis for the period 2020-2022. This has allowed temporary departures from the budgetary requirements applied under the European fiscal framework. This implies that, while there are no consequences for institutions when a breach occurs they must continue to submit the information as indicated by the reporting schedule.

The main challenge of the European Green Deal is to turn the EU into a modern, resource-efficient and competitive economy. The term financial risk has arisen in relation to the financial sustainability of LGs, there being multiple approaches to define this term. Financial condition (Mead, 2001), fiscal health (Hendrick, 2004), fiscal distress (Kloha *et al.*, 2005), or financial health (Zafra Gómez *et al.*, 2009) are examples of terms with a similar meaning that are used by authors, acts, governments, or institutions, and which have come into vogue internationally in recent years (Zafra

[3] Definition based on the Royal Spanish Academy's definition.

Gómez *et al.*, 2009). All these terms are related to indicators that measure the financial position of LGs.

Central governments have developed legal mechanisms to control the sustainability and activities of the different Administrative bodies. According to Bethlendi *et al.*, (2020), public statements enhance the concept of rule-based budgeting, which is also complemented by strengthening control tools. Reducing public sector costs and debt has resulted in the implementation of requirements in many countries, together with the introduction of sustainability management to transform how governments implement policy and deliver public services (Zeemering, 2018). Tommasetti *et al*., (2020) show that public sector organizations are currently coping with a scenario characterised by fiscal surveillance needs, requiring an extensive review of public resource allocation. Regulatory failures on financial sustainability did in this respect contribute to the onset of the global financial crisis (Moschella and Tsingou, 2013), giving rise to the adoption of new legislative measures by governments to control financial situations by using specific tools and challenging them to introduce reforms in order to improve management (Meneguzzo *et al.*, 2013). Reporting systems are therefore an exercise in showing the transparency, which is researched as a cause for greater efficiency and effectiveness (Hermosa *et al*., 2021), of Administration activities that help to ensure sustainability. In addition, access and information rights have been guaranteed and prescribed by law, something which has also promoted transparency as a result of citizen participation. (Monfardini, 2010). The reporting and disclosure of information have become the pressing challenge for Public Administration as the means for achieving financial and non-financial sustainability. Monfardini *et al.*, (2013) indicate that disclosure is considered a powerful legitimising tool, recalling the idea of accountability. Legislative developments and the precise schedules of reporting requirements have led to the main activity of LG controllers being to report financial and non-financial information. Most regulation on sustainability not only defines what sustainability is, but it also provides alert mechanisms to prevent instability situations. One of the mechanisms used to control LGs' financial health is benchmarking. In this vein, benchmarking identifies *voluntary local self-management*, without any intervention from the state, *compulsory hierarchical management*, in which the design of the behavior indicators takes place under the supervision of the central government, and a *vertically coordinated management* with cooperation between central government

and LGs (Kuhlmann and Jäkel, 2013). It is particularly true in financial reporting that accounting provides the mechanism that allows financial accountability to be fulfilled (Ruggiero *et al.*, 2021). Universally accepted benchmarking indicators make it possible to reduce the costs to public officials that arise from factors that characterise political markets (Baber and Sen, 1984). As a result, different reporting systems have been developed, such as the Global Reporting Initiative (GRI), founded in 1997, or the Financial Trends Monitoring System (FTMS), developed by the International City/County Management Association (ICMA). The elaboration of an accountability index based on GRI items can enhance the comparison among countries towards benchmarking (Hermosa *et al*., 2019). The universally accepted sustainability reporting systems define indicators which involve showing not only what the financial situation is, but also what the situation is in other areas, such as social and environmental fields. Alongside this, the *Integrated Report* emerged in non-financial reporting in 2013 as a standard universally accepted report, being a theoretical framework formulated by the International Integrated Reporting Council (IIRC) for public and private sectors. The latest version of this report is from 2021 and its goal is to promote a more cohesive approach to corporate reporting. Biondi *et al.* (2018) state that non-financial reporting makes data meaningful and understandable by supplementing financial information and Tylec (2020), supports the use of non-financial information to increase the effectiveness of management. However, some authors believe it is necessary to reinforce efforts in the development of non-financial reporting because it is not sufficiently comparable and because corporations do not report all non-financial information that users think is essential (La Torre, 2020). The adoption of *Directive 2014/95/EU* of the European Parliament and of the Council makes it possible to create the main scenario by enhancing environmental commitment.

Previous research has been devoted to finding the best tool that defines the concept of financial sustainability through the evaluation of financial indicators. Kaldani *et al.* (2016), Gerrish and Spreen (2017) and Trussel and Patrick (2018) use indicators related to debt and debt per capita, while Robbins *et al.* (2016) use indicators linking debt to income and assets. Other researchers such as Navarro Galera *et al.* (2015) have built a model based on the probability of default (PD) according to Basel II requirements and have studied the impact of socioeconomic variables on LG debt.

The legal framework of this Doctoral Thesis is focused on the regulation transposed into Spanish law regarding EU sustainability requirements. With respect to financial sustainability, Spanish governments amended Article 135 of the *Spanish Constitution* and subsequently developed the Organic Law on Budgetary Stability and Financial Sustainability, which was enacted in 2012. This law establishes a legal mechanism called *reporting requirements* which provide a schedule for evaluating the financial position of LGs in order to monitor their financial sustainability. This implies a dual obligation: fulfilling financial indicators and disclosing information periodically. According to the Organic Law on Budgetary Stability and Financial Sustainability, all Spanish public sector entities have to meet the following principles: budgetary stability, financial sustainability, multi-year investments, transparency, efficiency in allocation and use of public resources, responsibility, institutional loyalty, and the development of mechanisms for the coordination and implementation of the law. This law also defines various benchmarking indicators: *budgetary stability*, *expenditure rules*, *public debt* and *average payment period*. LGs have to report on those indicators which measure financial sustainability over the year. Financial information is uploaded and shown on the Ministry of Finance's website entitled "Virtual office for the financial coordination of local entities", using XML taxonomy. Along with the indicators included in the Organic Law on Budgetary Stability and Financial Sustainability, the Spanish Public Sector Chart of Accounts (SPSCA) extended the indicators required in point 25 of the Notes section of the Annual Accounts, establishing another set of indicators: financial, budgetary and asset indicators.

The non-financial requirement included in *Directive 2014/95/EU* has been introduced in Spain with the adoption of *Law 11/2018* in the area *of non-financial information and diversity*. The main innovation of this law is the establishment of a *Non-Financial Report* (NFR) which would be prepared on a mandatory basis by corporations which meet certain requirements. This report may contain information about certain issues such as the environment, social issues and staff, respect for human rights, the fight against corruption and bribery and the information society. Together with this law, the *Spanish Association of Accounting and Business Administration* (AECA) has developed a model of integrated information for the preparation of this report. It comprises the *Integrated Reporting Model,* which includes financial information along with information about *Environmental, Social* and *Corporate*

Governance matters (FESG). The Law and the Directive do not define any indicators for calculation. However, the IRM- FESG model defines detailed Key Performance Indicators (KPIs) about non-financial concepts, which allows corporations to prepare NFR. The AECA proposal is considered to be a private and generally accepted model for accounting standards in Spain.

The LGs study allowed us to analyse the financial situation in the third layer of Spanish Administration. The main objective of LGs is to manage the provision of public services under their responsibility and to guarantee a minimum level of services according to the size of the population. This objective entails an evolution of the concept of sustainability reporting in the public sector (Stefanescu, 2021), being focused on environmental and social aspects, although the financial area remains to the fore (Greiling *et al.*, 2015). Reporting requirements have supported the role of the controller. Since 2013, they have been able to evaluate the financial situation to prevent an instability scenario. This enables us to implement corrective actions in order to redirect LG management.

The aim of this Doctoral Thesis is to analyse the sustainability of Spanish Local Government service delivery through its financial and non-financial reporting. The research questions concerning financial sustainability have addressed the effect of Spanish government legislative initiatives adopted to achieve sustainability in the provision of public services and to see whether Spanish financial indicators are reliable in order to measure financial sustainability. Non-financial sustainability has been studied through the analysis of non-financial information reporting by municipally owned companies, which are public service providers.

This Doctoral Thesis is organised into two sections, the first concerning financial sustainability and the second analysing non-financial sustainability. The first section is includes chapters 1 and 2. The aim of Chapter 1 is to analyse the effectiveness of regulation on the financial health of Spanish Local Governments, using isomorphic and improvement approaches. In Chapter 2, the focus is on testing whether financial indicators regarding the financial conditions defined in Spanish regulation are backed by worldwide, generally accepted financial benchmarking indicators. The second

Section includes Chapter 3, which analyses non-financial and sustainability reporting disclosed by municipally owned corporations in Spain obliged to do so.

The innovative contribution in this Doctoral Thesis is to analyse the sustainability of Spanish Local Administration from both a financial and non-financial information reporting perspective.

Section one

The aim of Chapter 1 is to analyse the effectiveness of Spanish local government regulation of financial health. The aim is to study the effect of implementing new central government requirements and indicators regarding fiscal stability and budgetary balance in order to improve the financial health of local governments. New regulations create a dual requirement: the fulfilment of financial sustainability and the disclosure of this information. The aim of the research question in this chapter is to analyse the effect of disclosing the indicators defined in the Spanish Organic Law on the Budgetary Stability and Financial Sustainability of Public Administration and the Spanish Public Sector Chart of Accounts (SPSCA) on the financial health of LGs, by comparing the LG financial situation before and after their implementation. Following Gerrish and Spreen (2017), the methodology used was linear regression for each indicator, applying isomorphic and improvement approaches[4]. The results support the isomorphic approach, although this is not so in all cases. The isomorphism evidence justifies the need for introducing legal requirements in order to make sure that all indicators achieve the minimum values required by law. We consider that these differences can be explained by the effect of the trend towards the average that is, caused by the disclosure of information, and which makes comparison between peers possible and improves the situation of those with worse financial health.

The aim of Chapter 2 is to test the reliability of financial sustainability in the case of Spanish LGs. LGs have strengthened financial control as a consequence of mandatory requirements to ensure financial sustainability. The research question in this

[4] Isomorphism is considered a constraining process that forces one unit to resemble other units that face the same set of environmental conditions (Hawley 1968). Institutions will tend to adopt the isomorphism as a powerful force that encourages imitation (DiMaggio & Powell, 1983), due to mimetic isomorphism. Improvement approach, considers that the use of benchmarking can redirect the financial situation of LGs because managers can compare financial stages over time and receive extra information which helps them to adopt better financial decisions (Ammons and Rivenbark, 2008; Rivenbark and Roenigk, 2011; and Ammons and Roenigk, 2014).

study focuses on determining whether indicators about financial health defined in Spanish regulation are backed up by worldwide, generally accepted financial benchmarking indicators. This is why we analysed the relationship between Spanish indicators of financial sustainability based on European Union (EU) regulations and Financial Trend Monitoring System Indicators (FTMS) developed by the International City/County Management Association (ICMA). For each LG, ICMA indicators were calculated and Spanish indicators were gathered from 2010 to 2017. Two methodologies are applied next: discriminant analysis and logistic regression. The indicators that best describe the contents of the transposition of EU financial requirements into Spanish LG legislation are *Revenue per capita* and *Revenue shortfalls or surpluses*, *Expenditure per capita*, *Operating deficit or surplus*, *Current liabilities* and *Long term debt*. The evidence supports the measurement of financial condition being related to revenue (*budgetary stability*), expenditure (*expenditure rule*) and debt (*public debt*), which is aligned with the ICMA system and previous literature. These results provide a model that allows other countries to test their own domestic measurement of financial condition against worldwide, generally accepted benchmarking standards. As a result, this article provides two contributions to the financial sustainability arena: first Spanish financial indicators are aligned with globally accepted benchmarking, and second, we suggest a model to test the reliability of LG financial sustainability indicators.

Section two

Chapter 3 focuses on non-financial reporting in Spanish municipally-owned corporations (MOCs) under *Law 11/2018 on non-financial information and diversity and* studies Non-Financial Report (NFR) in Spanish municipally owned corporations (MOCs). The aim of this paper is to analyse the the opinions of the experts who carried out the first NFRs in Spanish in order to determine the usefulness of this information and its future contribution to the improvement of financial sustainability decision-making processes. The *Integrated Reporting Model for Environmental*, *Social* and *Corporate Governance* (IRM-FESG) prepared by the Spanish Association of Accounting and Business Administration (AECA) offers a range of non-financial indicators. The last reports that the MOCs were obliged to disclose have been reviewed

and the opinions of experts were analysed by using the Delphi method. NFR disclosure leads to an improvement in the image of the activities carried out by the MOC, improving the information provided to citizens. One of the challenges of NFR is the possibility of making it comparable between years and similar entities. A common nomenclature and contents would allow a comparison of the non-financial information. Regarding the typology of indicators, the utility of *Environmental* and *Social* indicators is high whereas the difficulty in preparing the indicators is low-medium, and in *Corporate Governance Indicators*, experts agreed about the medium-high utility of board members and gender diversity. This study serves as an illustrative example to be examined by other public bodies and all local entities which would probably be obliged to include this report in their integrated reporting in a near future. This could be useful for policymakers and public sector organisations, which require NFR disclosure in order to improve and reinforce legislation in this area.

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SECTION 1: FINANCIAL SUSTAINABILITY

CHAPTER 1: ANALYSIS OF THE EFFECTIVENESS OF REGULATION ON FINANCIAL HEALTH OF SPANISH LOCAL GOVERNMENTS

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Abstract

The need to reduce public sector costs and debt has resulted in the implementation of requirements in many countries. Spain belongs to a group of countries which monitor the financial health of their local governments, using financial indicators enforced by law, and reporting this information periodically. The objective of this paper is to analyse whether the introduction of the 2012 Spanish legislation regarding fiscal stability and budgetary balance and Ministry of Finance Order 1781/2013, which develop new indicators, have led to improvements in the financial health of local governments. The results of our analysis show that the introduction of legal requirements is effective and that the disclosure of indicators for benchmarking purposes has been beneficial and positive, although this is not so in all cases. The practical implication of this study is that the dual demands of evaluating the financial situations of local governments and disclosing this information reinforce their responsibility with respect to the general interest. This enables the comparative evolution of indicators, concluding that requirements are also needed to ensure that the goals are achieved, thereby helping to restore the reliability and transparency of their activities.

1.1. Introduction

After the 2008 financial crisis, public concerns arose regarding countries' the level of borrowing in the Eurozone. Such concerns created pressure on the European Union (EU) and Eurozone countries to make public statements about the sustainability of their debt and how financially prudent they were in order to restore financial market confidence, enhancing the concept of rule-based budgeting which is also complemented by strengthening central control tools (Bethlendi *et al.*, 2020). The need to change through innovation (Robalo and Gago, 2017) and reduce public sector costs and debt has resulted in the implementation of requirements in many countries, together with introducing sustainability management to transform how governments implement policy and deliver public services (Zeemering, 2017). Financial sustainability requirements are a tool chosen by EU policymakers to track the fiscal health (Hendrick, 2004; Zafra Gómez *et al.*, 2009) of countries belonging to the Eurozone and, in turn, by the Spanish central government to control the financial conditions (Mead, 2001) of Spanish local governments (LG) and they have a dual obligation: fulfiling financial indicators and disclosing information periodically. In Spain, the financial indicators were implemented in 2012 through the Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations and also in 2013 with Ministry of Finance Order 1781/2013. Both regulations, which allow the financial activities of local government entities to be monitored, are a new source of information for LG management, making it possible to anticipate decision-making, and being something which could be useful and in the public interest.

The objective of this article is to analyse whether the introduction of Spanish legislation in 2012 and 2013 regarding fiscal stability and budgetary balance has led to overall improvements in the financial health of LGs, whether the changes are improvements resulting from benchmarking among LGs' peers or if they have an isomorphic component; peers involve the LGs comparing themselves with each other, which implies that LGs are trying to improve their financial situations.

To do this, we test if fiscal benchmarking accelerates isomorphism in LGs (DiMaggio and Powell, 1983), applying a model of residual analysis based on that developed by Gerrish and Spreen (2017). Our objective is focused on analysing the effect of information disclosure, and checking if comparing LGs improve the financial performance of LGs with poor ratios due to prevailing trends.

The database consists of an analysis of 10 financial indicators produced annually by the 143 biggest LGs in Spain, representing 53% of the Spanish population, for the period 2010 to 2016. This paper shows the Spanish experience, something which may be useful to other countries because it leads to comparisons between peers, as the disclosure of financial information encourages the improvement of their LGs' financial health.

The article is organised as follows: Firstly the background regarding the assessment of LG financial risk and the Spanish legal financial framework are explained. Secondly, the theoretical approach of this study is introduced. Thirdly, the methodology is described. Then the analysis of the results is shown. A discussion takes place next and, finally, conclusions are drawn.

1.2. Background to assessing LG financial risks

The academic literature proposes multiple approaches to define financial risk terms in LGs; these are used interchangeably. Financial condition (Mead, 2001), fiscal health (Hendrick, 2004), fiscal distress (Kloha *et al*., 2005), or financial health (Zafra Gómez et *al.*, 2009), are examples of terms with a similar meaning used by authors, acts, governments, or institutions that have come into vogue internationally in recent years (Zafra Gómez *et al.*, 2009). All these terms are related to indicators that measure the financial position of LGs.

The common idea in all definitions is that LGs have liabilities and debts to third parties and the financial risk refers to the likelihood of failure. To assess this likelihood, some indicators are based on the financial information used to measure the concept of net lending/net borrowing defined by the European System of Accounts (ESA), i.e., the solvency or liquidity of LGs.

Regulatory failures on financial sustainability contributed to the onset of the global financial crisis (Moschella and Tsingou, 2013), giving rise to the adoption of new legislative measures by governments to control financial situations by using specific tools and challenging them to introduce reforms in order to improve management (Meneguzzo *et al.*, 2013). These control tools typically assess the fiscal health of local governments (LGs), based on both national transposition to the local government or regional arena of financial sustainability requirements established by the EU, and monitoring of how each LG performs across several financial indicators. In addition to the indicators, there were compulsory financial limits for LG deficit and debt which were developed with benchmarking programmes composed of financial indicators and whose objective is to report financial information that reveals deficiencies and facilitates policy decisions to improve financial performance (Rivenbark and Roenigk, 2011).

From the analysis of previous literature, it seems that authors apply universally accepted benchmarking indicators, which makes it possible to reduce the costs to public officials that arise from factors that characterise political markets (Baber and Sen, 1984). The most used is the Financial Trends Monitoring System (FTMS) developed by the International City/County Management Association (ICMA), which defines financial condition as the ability to maintain existing service levels, resistance to local and regional disruptions, and meeting the demands of natural growth, decline and change. ICMA's tool consists of a total of 42 indicators categorised into different factors: revenues, expenditures, operating position, debt, unfunded liability, capital plant, community needs and resources, and disaster risk indicators. Other accepted benchmarking tools are the alert system from the Canadian Institute of Chartered Accountants, and the ratios included in the Comprehensive Annual Financial Report established by the GASBS 34 (Governmental Accounting Standards Board).

Most indicators previously used are related to debt; however, authors have analysed the financial condition of public entities with different variables (see Table 1). Clark (2015) studies the financial conditions of local governments through the Financial Condition Index (FCI), using 11 variables which measure financial stress. Gorina *et al*. (2018) link financial condition to a regression model in which fiscal distress is the

dependent variable, and the financial indicators are the independent variables. We have identified a variable that is similar in our study: budgetary solvency. In addition, Bisogno *et al.* (2019) define this variable as 'the ability of a public sector organisation to raise sufficient revenues to cover its legally required expenditures without falling into deficit', which is in line with the concept of non-financial budgetary balance studied here. The asset information is also included as variables explaining financial sustainability by Kaldani et al. (2016), Gerrish and Spreen (2017), and Trussel and Patrick (2018) use indicators related to debt that are similar to those in our study: debt service (our indebtedness) and debt per capita, and Robbins *et al.* (2016) apply indicators linking debt to income and assets. Once again, the dependent variable is financial risk, and the indicators are the independent variables. In conclusion, recent international literature aims to explain financial condition as a dependent variable of a set of financial indicators. The independent variables are internationally accepted indicators related to debt which have also been factored into our study.

Other scholars, such as Navarro Galera *et al.* (2015), Gerrish and Spreen (2017), have built a model based on the probability of default (PD) according to Basel II requirements and have studied the impact of socioeconomic variables on LG debt. Their conclusions are that PD is influenced by population, socio-economic and financial factors, mayors who have an economics-related university degree and the presence of a low proportion of women councillors in the municipal corporation during that period. Likewise, the left-wing ideology of the local governing party and its ideological alignment with the party in power in the regional government are political factors that may increase the default risk of LGs. Bastida *et al*. (2011) and Pérez López *et al.* (2013) use debt per capita as a dependent variable. Bastida *et al.* (2011) conclude that population, immigration, economic level, transfers, and taxes have a positive impact on debt per capita and Pérez López *et al.* (2013) conclude that the variable which best explains the level of debt is the transfer index.

There is a consensus in Spanish literature regarding shortcomings in the financial information disclosed in order to study LGs: e.g., 'limitations arising from the information available in Spain' (Cabaleiro *et al.*, 2012); 'lack of information for certain years' (Solé-Ollé and Sorribas-Navarro, 2012); 'such information was not available for

the local governments in our sample' (Navarro Galera *et al.*, 2017a). Hence, the deficit of available information has been a limitation for scholars.

Our aim is to analyse the financial indicators implemented in Spain in order to achieve financial sustainability and test the impact before and after this implementation and disclosure, establishing the financial indicators as dependent variables and a selection of socio-economic variables as control variables. This allows us to obtain the residuals of regressions to be analysed in order to assess the extent to which the disclosure of information, which makes benchmarking between LGs possible, contributes to improve the financial situation of these entities. The perspective analysed hopes to be useful to other decentralised countries which have introduced a dual requirement for LGs: to fulfil financial indicators and periodically disclose financial information.

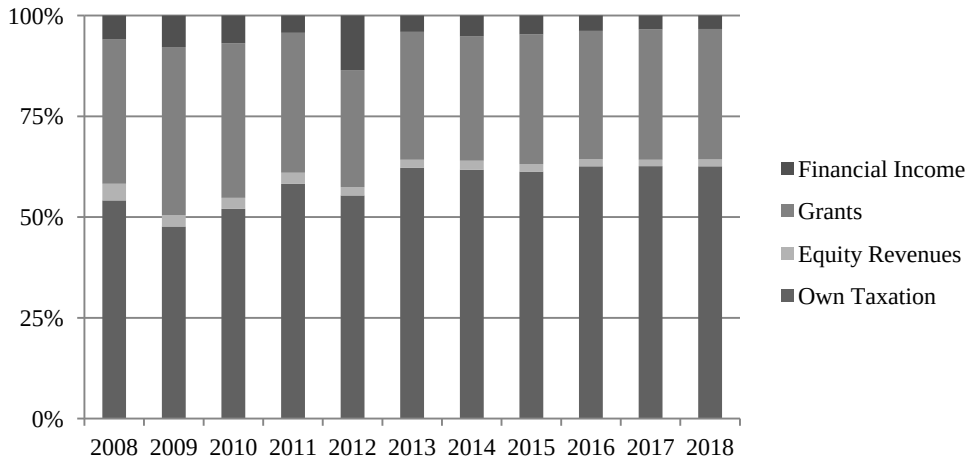
Table 1. Variables studied in researches on financial condition.

Authors	Indicators
Bastida *et al*., 2011	Debt per capita.
Cabaleiro *et al*., 2012	Sustainability (long term debt), flexibility (net current budgetary revenues- net budget obligations), vulnerability (net current budgetary revenues-taxes-transfers).
Solé-Ollé *et al*., 2012	Own revenues, grants, expenditures, debt service, and deficit.
Pérez López *et al* 2013	Debt per capita.
Clark 2015	Cash ratio, quick ratio, current ratio, operating ratio, surplus (deficit) per capita, net asset ratio, long term liability ratio, long term liabilities per capita, taxes per capita, revenues per capita, expenditures per capita.
Navarro Galera *et al* 2015, 2017	Cash surplus, capital or current debt, current assets/current liabilities, current revenue-current expenditure.
Kaldani *et al*., 2016	Budget balance, asset flexibility, pension funding,
Robbins *et al*., 2016	Current ratio, average collection period, self-income ratio, operating surplus, operating surplus per resident, operating surplus ratio, commercial rates collection efficiency ratio, housing rents collection efficiency ratio, commercial charges collection efficiency ratio, housing loans collection efficiency ratio, net financial liabilities, net financial liabilities ratio, gross debt to income ratio, debt to assets ratio.
Gerrish and Spreen, 2017	Total margin ratio, percent change in net assets, charge to expense ratio, debt service ratio, quick ratio, net assets ratio, debt to assets ratio, capital assets condition ratio, operations ratio, intergovernmental ratio, debt service ratio, quick ratio, fund balance as a percentage of expenditures, debt as a percentage of assessed value).
Trussel and Patrick, 2017	Revenue per capita, intergovernmental revenues, expenditures per capita, operating position, user charges, public works, debt service, debt to revenue, debt per capita, debt to assets, fund balance to revenues, fund balance to assets, cash to revenue, cash to debt, current ratio, pension costs, employee benefits, tax revenue concentration, tax capacity.
Gorina *et al*., 2018	Fiscal distress. Independent variables: cash solvency, budgetary solvency, long term solvency, revenue structure and service-level solvency.
Bisogno *et al*., 2020	Budgetary solvency.

1.3. The Spanish legal financial framework

Spain is a decentralised country, and the public sector is made up of three layers of government: central government, regional governments (autonomous communities) and LGs, which according to the law are composed of municipalities, provinces, islands in the Balearic and Canary archipelagos, territorial entities beneath the level of municipality, counties, metropolitan areas and associations or groups of municipalities, characterised by the governing principles in the Spanish Constitution (1978): autonomy (Article 137) and financial sufficiency (Article 142), which define the activities of Spanish LGs. LGs have the autonomy to manage the provision of public services under their responsibility, within the scope of their authority according to Law 7/1985 of 2 April, regarding the Basis of Local Government, being within their own competence or delegated by central or regional governments, and guaranteeing a minimum level of services according to the size of the population. This law distinguishes between four groups: services provided in all LGs (such as public lighting or water supply and basic sanitation), services provided in LGs with more than 5,000 inhabitants (such as parks or waste treatment), services provided in LGs with more than 20,000 inhabitants (such as protection of situations of poverty or social needs) and services provided in LGs with more than 50,000 inhabitants (such as public transport or protection of the environment). In order to fund the public services provided, the structure of local income allows LGs collect their own taxes and receive transferences and grants from the central government, regional governments, and/or supranational organisations and they can also fund the services provided by borrowing from banks and financial markets up to the limits established by the relevant laws. The weight of different sources of financing LGs is similar (Graph 1) because their own taxation and grants (from Central and Regional government) are the main forms of finance. From 2008 to 2011, the proportion of each form of finance has varied, although the own taxation is the main source of financing. It is necessary to highlighting 2012 as the year with an increase in financial income, maybe as a consequence of changes in regulation regarding credit for LGs. From 2013 onwards, the proportion of financing in LGs is constant.

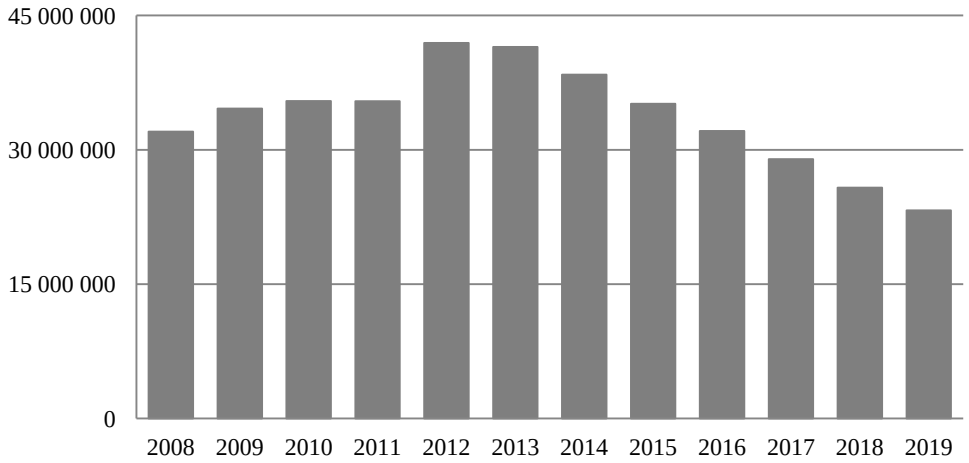
Graph 1. Evolution of income structure of LGs.



Source: Spanish Ministry of Finance

The Spanish regulatory framework for access to credit changed with the adoption of Royal Decree-Law 8/2010 of 20 May in order to reduce the public deficit while introducing additional constraints with specific approval processes. This established a limit of 110% on the volume of indebtedness for LGs (although limits can be modified over time in the National Budget) in relation to the current income established, in compliance with the principle of financial management that aims to minimise their financial risk.

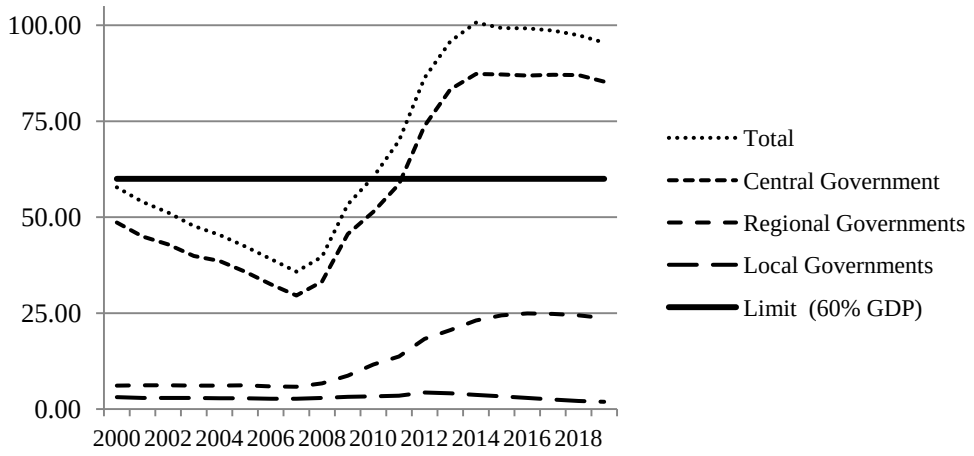
Graph 2. Evolution of LG debt, in thousands of Euros.



Source: Spanish Ministry of Finance

Graph 2 shows the evolution of LGs' debt, 2012 and 2013 being the years with a higher level of indebtedness due to the special measures implemented regarding access credit. It also established a limit of 60% of Gross Domestic Product (GDP) for the whole administration, distributed by administration as 44% for Central Government, 13% for Regional Governments and 3% for LGs.

Graph 3. Evolution of Public Administration's debt according to the Excessive Deficit Procedure protocol, as a percentage of Gross Domestic Product (GDP).



Source: Bank of Spain.

Graph 3 shows the evolution of the Public Administration's debt and a clear upward trend in Central and Regional Government debt, which exceeds the global debt limit of 60% of GDP. This figure helps us to understand the situation of the three layers of administration and how they contribute to the composition of debt in Spain, where Central and Regional Governments are the most heavily indebted.

The main financial control body in Spain is the Supreme Audit Institution, which requires annual financial statements from LGs. There are also other institutions which reinforce financial control: Regional Government Audit Institutions and the Internal Audit Institution at each LG. At local level, internal control is carried out by the LG's financial controller, who assesses whether items with economic impacts are consistent with the budget and applicable regulations, and who directly monitors the financial situation of LGs. There are two internal control approaches: an ex-ante control related to legal compliance and an ex-post mechanism related to financial control. Our research is focused on the second of these. Spanish legislation in Royal Decree (RD) 424/2017 of

April 28 – which regulates the internal control of LGs – includes a description of the concept of risk for LGs, which is defined *as the possibility of events or circumstances occurring that could lead to non-compliance with the applicable regulations, evaluating the reliability of financial information, and effectiveness and efficiency in management*. This RD strengthens the LG financial controller's position, ensuring legal coverage with instructions for internal audits, which should prepare an Annual Financial Plan that describes the permanent control and public audits applied during the year at the entity. As a Eurozone member, Spain had to approve a regulatory framework consistent with EU requirements to achieve specific commitments towards getting back on the road to growth. As a consequence of pressure from the EU, Article 135 of the Spanish Constitution was modified by socialist president Zapatero and the Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations was enacted in 2012. This act establishes the requirements to be met by LGs in order to ensure their financial sustainability. According to the Organic Law on Budgetary Stability and Financial Sustainability, all Spanish public sector entities have to meet the following principles: budgetary stability, financial sustainability, multi-annuity investments, transparency, efficiency in allocation and use of public resources, responsibility, institutional loyalty, and the development of mechanisms for the coordination and application of the law. This act also establishes various benchmarking indicators as described in Table 2: *non-financial budgetary balance, expenditure rule, public debt* and *average payment period*.

The Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations establishes a legal mechanism called *reporting requirements* which provides a schedule for different analysis of LGs' financial positions for monitoring their financial health, and developed by Ministry of Finance Order 2105/2012, on 'Information reporting obligations'. LGs have to report on budgetary stability and financial sustainability over the year. LGs have to evaluate budgetary stability and financial sustainability following the specifications included in this act when preparing, in the fourth quarter of the year, the budget for the next fiscal period, and to prepare the financial report at the end of the fiscal period. LGs must upload the information shown in Table 2 onto the Ministry of Finance's website entitled 'Virtual office for financial coordination of local government entities', using the XML taxonomy.

Table 2. The Organic law on Budget Stability and Financial Sustainability indicators (2012)

Indicator	Description	Calculation	Interpretation
Current solvency	It reflects the percentage of budgetary and non-budgetary debts that can be met with the liquidity immediately available.	Liquid funds divided by current liabilities.	If the ratio is greater than one, it means that liquid funds are sufficient to satisfy current obligations.
Short-term solvency	It reflects the ability of the LGs to meet their outstanding obligations in the short term.	Liquid funds plus receivables outstanding, divided by current liabilities.	If the ratio is greater than one, it means that the liquid funds and the charges pending collection are sufficient to cover current obligations.
Solvency ratio	It shows if current assets cover current liabilities.	Current assets divided by current liabilities.	If the ratio is greater than one, it means that the current assets are sufficient to cover current obligations.
Debt per capita	In LGs this index divides the total debt of the public entity by the total population.	Current liabilities plus non-current liabilities, divided by population.	It shows the amount of short and long term debt for each inhabitant in cities.
Indebtedness	Represents the relationship between the total liabilities required (current and non-current) with respect to equity plus the total liabilities of the entity.	Current liabilities plus non-current liabilities, divided by the sum of current liabilities, non-current liabilities and equity.	It shows the total liability of the LGs in the short and long term.
Debt ratio	It represents the relationship between current and non-current liabilities.	Current liabilities, divided by non-current liabilities.	It shows the relationship between short-term debt and long term debt.
Cash flow	It shows whether net flows of cash managed cover the entity's liability.	Current liabilities plus non-current liabilities, divided by net flows	It shows the relationship between short and

managed. long term and cash.

The Spanish Ministry of Finance website publishes a set of financial indicators for each LG and makes them available in an online database with the goal of encouraging benchmarking. Open access to this information allows LGs to compare their financial positions relative to one another each year and over time. The aim of these initiatives is often for LGs to act on that information and make changes to their financial management. This law describes preventive measures, which is an advantage because it is possible to identify signs of fiscal distress at an early stage and LGs can correct the situation before it escalates (Maher *et al*., 2020). The new regulation also includes corrective and coercive measures: at the end of the fiscal year, in cases of a breach of *budgetary stability*, *the expenditure rule* or the *public debt* indicator, LGs must take actions in order to get the LGs back to a position of financial stability. Entities which fail to meet the indicator limits must prepare an *eco- financial plan* aimed at recovering financial stability over the next two fiscal years, because benchmarking is linked to formal and/ or informal sanctions (Kuhlmann and Jäkel, 2013). Although the Spanish Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations was adopted in 2012, its implementation was first reported in January 2013. We therefore analysed the behaviour of LGs before and after 2013 in terms of non-financial *budgetary balance*, *public debt* and *average payment period*. The ratio expenditure rule, which would also be interesting to analyse, is not available in reporting websites and cannot be tested.

Since 2012, the Law on Budgetary Stability and Financial Sustainability and the Law on Transparency, Access to Public Information and Good Governance (Law 9/2013 of 9 December, which develops the transparency of public activity) have made it easier to access LG financial information, enhancing the transparency and openness of LG financial information (García-Fénix and González- González, 2020).

Together with the indicators included in the Organic Law on Budgetary Stability and Financial Sustainability, the Spanish Public Sector Chart of Accounts (SPSCA) extended the indicators required in point 25 of the Notes section of the Annual Accounts (containing the balance sheet, the income statement, the statement of changes

in equity, the statement of cash flows) establishing another set of indicators: financial, budgetary and asset indicators. Only financial indicators have been chosen in this study because the budgetary character is analysed with indicators included in the Law on Budgetary Stability and Financial Sustainability in order to not be repetitive (see Table 3). These indicators are reported at the end of the fiscal year and uploaded to the Supreme Audit Institution website.

The SPSCA adapted to local administrations was approved in 2013, but the effective date was 1 January 2015. So, we also studied the pre- and post-implementation in 2015 of the following indicators: *current solvency*, *short-term solvency*, *solvency ratio*, *debt per capita*, *indebtedness*, *debt ratio* and *cash flow*.

Table 3. SPSCA adapted to Local Administration Financial Indicators (2015)

Indicator	Description	Calculation	Interpretation
Current solvency	It reflects the percentage of budgetary and non-budgetary debts that can be met with the liquidity immediately available.	Liquid funds divided by current liabilities.	If the ratio is greater than one, it means that liquid funds are sufficient to satisfy current obligations.
Short-term solvency	It reflects the ability of the LGs to meet their outstanding obligations in the short term.	Liquid funds plus receivables outstanding, divided by current liabilities.	If the ratio is greater than one, it means that the liquid funds and charges pending collection are sufficient to cover current obligations.
Solvency ratio	It shows if current assets cover current liabilities.	Current assets divided by current liabilities.	If the ratio is greater than one, it means that current assets are sufficient to cover current obligations.
Debt per capita	In LGs this index divides the total debt of the entity by the total population.	Current liabilities plus non-current liabilities, divided by population.	It shows the amount of short and long term debt for each inhabitant in cities.
Indebtedness	Represents the relationship between the total liabilities required (current and non-current) with respect to equity plus the total liabilities of the entity.	Current liabilities plus non-current liabilities, divided by the sum total of current liabilities, non-current liabilities and equity.	It shows the total liability of the LG in the short and long term.
Debt ratio	It represents the relationship between current and non-current liabilities.	Current liabilities, divided by non-current liabilities.	It shows the relationship between short-term debt and long term debt.
Cash flow	It shows whether net flows of cash managed cover the entity's liability.	Current liabilities plus non-current liabilities, divided by net flows managed.	It shows the relationship between short and long term and cash.

These indicators are intended to represent the financial position of LGs because, besides providing public services, LGs are challenged to control the financial sustainability of the services delivered. This information allows managers to take decisions to reach or maintain the financial balance required by the EU.

1.4. Theoretical approach: improvement and isomorphism

Institutional theory assumes that organisations respond to pressure from their environments and adopt structures and practices that are considered legitimate and socially acceptable by other organisations in their field (Ribeiro and Scapens, 2006). The basic premise is that the tendency of organisations to conform to predominant norms, traditions, and social influences in their external environments will lead to homogeneity among organisations in their structures and practices (DiMaggio and Powell, 1991). According to Scott (2008), 'institutional theorists consider organisational fields as contexts imposing requirements and/or constraints on organisations: organisations operating within a given context, if they were to be successful, are obliged to conform to the dictates of their institutional environments' (see DiMaggio, 1983; Powell, 1988). This theory enhances how organisations tend to take on similar forms which are referred to as a process of isomorphism (Deegan, 2019) promoting their stability and success (Meyer and Rowan, 1977). In line with this and based on Hawley's (1968) definition, isomorphism is considered a constraining process that forces one unit to resemble other units that face the same set of environmental conditions. In this sense, institutions will tend to adopt the isomorphism as a powerful force that encourages imitation (DiMaggio and Powell, 1983), due to mimetic isomorphism. In addition to mimetic isomorphism, there are two possible perspectives that depend on the attitude of LGs showing poor financial ratios. An explanation of why LGs with a worse financial position tend towards the average is because there is an imitation which endeavours to emulate those which manage better. This enhances an improvement approach (mimetic isomorphism), but another explanation is possible: disadvantaged LGs are harnessing maximum indebtedness limits in order to gain more financial resources as a consequence of better quality in the provision of services to citizens. The latter perspective could be considered a financial strategy of LGs that endorses a maximum

exploitation of available financial resources within the limits of the law, and arising from a mimetic isomorphism and decoupling.

In other words, it is worth considering whether an improvement in the financial condition of LGs could be achieved by enhancing transparency and promoting benchmarking through the disclosure of financial information, and whether it should be required by law in the case of Spain (and in other bureaucratic/Weberian public administration styles). Identification of isomorphic components would justify both compulsory regulations in order to be sure that improvements are sufficient to overcome the thresholds established by the EU requirements transposed into Spanish regulations.

The impact on the financial position of Spanish LGs before and after the passing of a law on new financial condition requirements and the disclosure of new financial indicators on the official Spanish Ministry of Finance website is analysed from the perspectives of improvement and isomorphism approaches. With the introduction of new financial requirements, central government expected that the financial conditions of LGs would converge towards Eurozone requirements and that, with the disclosure of the new financial indicators, benchmarking information would be used to correct fiscal problems on a peer comparison basis.

The improvement approach notes the benefits of disclosing financial information for benchmarking because the display of financial indicators can contribute to improve the mean of financial indicators by providing information to LG managers in order to facilitate better decision-making (Rivenbark and Roenigk, 2011). Ammons and Rivenbark (2008), Rivenbark and Roenigk (2011), and Ammons and Roenigk (2014) find a positive effect in the disclosure of financial indicators; they argue that benchmarking is a way to transfer knowledge from another organisation judged to be superior because of the results it achieves. This approach considers that the use of benchmarking can redirect the financial situation of LGs because managers can compare financial stages over time and receive extra information which helps them to adopt better financial decisions. However, other authors (Behn, 2003; Moynihan and Pandey, 2010) state that the implementation of benchmarking is not, by itself, enough to achieve beneficial results in financial situations (isomorphic approach), because benchmarking tools simply summarise and report financial conditions, leaving LGs to use that information as they please (Gerrish and Spreen, 2017). The isomorphic approach states

null effect of these tools on LGs, which is not a negative perspective, because low-performing LGs will converge towards their peers. Following Gerrish and Spreen (2017), this study considers the concept of improvement in contrast to isomorphism; however, both terms are not mutually exclusive, because the convergence towards the mean can mean an improvement in some cases. Requirements may therefore be required in order to achieve improvements in the means of financial indicators and to reach the financial thresholds required by the EU. Gerrish and Spreen (2017) applied these theories to North Carolina's benchmarking tool, which is composed of 14 fiscal indicators. They clarified both possibilities: the introduction of a benchmarking tool will have an impact on the mean values of the monitored indicator values (improvement approach) and low-performing LGs will converge towards their peers, but so too will LGs with healthy financial ratios (isomorphic approach). The results of the study lend support to the fact that isomorphic and decoupling forces are stronger than improvement forces.

1.5. Methodology

The impact on the LGs' financial condition caused by the adoption of the new financial requirements and indicators mentioned above was studied by considering two base years (2013 and 2015) to compare the effect of these indicators before and after their implementation. This is why we analyse the behaviour of indicators which belong to two different laws that have been adopted in different years, indicators in the Spanish Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations and SPSCA indicators.

This analysis assesses the effect of adopting new reporting requirements (composed of different indicators which test financial condition) on LGs. The results of the pre- and post-analysis will confirm isomorphism or improvement approaches. The isomorphic approach upholds the view that the implementation of benchmarking is not enough to achieve beneficial results in financial situations, while the improvement approach supports the positive effect of benchmarking on financial decisions.

The aim is to analyse the LGs with the largest populations in order to ensure that the sample contains the entities which are obliged to provide all the basic public

services established by law. As a result, a dataset of LGs responsible for a population of greater than 50,000 was built from 2010 to 2016, the sample containing 143 entities. When there was not enough information about the indicators selected in the fiscal years 2010–2012, proxy variables were calculated by applying the legal procedures for LGs provided by the *Manual on Government Deficit and Debt* in the European System of Accounts, published by the Central Government Internal Audit Office (Intervención General de la Administración del Estado, IGAE), and the procedures included in the SPSCA adapted to local administrations in point 25 of the Notes section of the Annual Accounts. Budgetary execution statements disaggregated into economic classifications, the Statement of Financial Position and the Statement of Financial Performance were used to build proxies of indicators by following the legal definition of these indicators. Tables 2 and 3 include a column with the formula for proxy indicators (calculation column).

Following Gerrish and Spreen (2017), after running the Hausman test, the methodology applied was the fixed effects model. The change in the mean was checked to test the improvement hypothesis and the change in the standard deviation was checked to test the isomorphic hypothesis. The changes in the mean of each financial indicator, after the start of the benchmarking tool established by law, was analysed to confirm the improvement hypothesis. An advantageous change in the mean indicates a benefit for LGs; i.e., they improve the LGs' financial position after the effective date of the financial sustainability legislation. We also verified if the change in the mean was statistically different from zero by using standard errors of the regressions.

The model includes the following control variables: percentage of residents aged over 65, percentage with a college degree, median income, poverty rate, logarithm of popula- tion, logarithm of immigrant population density and unemployment rate. The choice of control variables was selected according to the control variables applied by Gerrish and Spreen (2017), and the logarithm of immigrant population density was chosen because we consider it an interesting variable. All this information was gathered from the National Statistics Institute (INE) at regional or local levels, according to availability. The analysis was made using a linear regression for each indicator. The dependent variables are these indicators: *non-financial budgetary balance, public debt, average payment period, current solvency, short-term solvency, solvency ratio, debt per*

capita, *debt ratio* and *cash flow*. In addition, a linear time trend control was included in the regression model.

Equation 1 shows the data panel regression:

Dependent variable = f (control variables, linear time trend control) Equation 1

The change in the standard deviation pre- and post-new regulations of the 10 financial indicators was calculated to study the isomorphism hypothesis. Bartlett's test was applied as an ANOVA-variant, which is appropriate for samples with equal variances (homoscedasticity). In this case, we used Equation 1 to calculate the residuals in both periods: pre and post. We used the residuals model because it controls other components that may have created dispersion in the post-implementation period, *ceteris paribus*.

Table 4. The Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations and SPSCA adapted to Local Administration indicators Descriptive Statistics.

	Mean	SD
Non-financial budgetary balance (+)	16,253,690.11	25,125,054.26
Public debt (-)	104,132,553.90	154,645,221.00
Average payment period (-)	51.95	46.94
Current solvency (+)	1.07	1.38
Short-term Solvency (+)	2.39	2.06
Solvency ratio (+)	1.36	1.22
Debt per capita (-)	1,104.62	2,604.79
Debt (-)	0.37	0.25
Debt ratio (-)	1.15	2.88
Cash flow (+)	-36.93	1,157.45

Table 5. Social and Economic Control Variables Summary Statistics, 2012-2016.

	Mean	SD
Percentage of residents over 65	17.34	32.15
Percentage with a college degree	27.85	56.39
Income average	27,024.63	4,554.83
Poverty rate	0.27	0.83
Ln (Population)	11.63	0.81
Unemployment rate (country)	0.24	0.08
ln (Density of Immigrant population)	9.09	1.04

The summary of the descriptive statistics is shown in Table 4, providing an overview of the mean and standard deviation of the 10 Spanish indicators. The sign (±) in parenthesis shows the behaviour of the indicator after a beneficial inter-period change. This table highlights the mean of the average payment period, which is 51.95 days; this implies a breach of the legal average payment period, which is established by law at 30 days. In addition, this table shows a mean of the current solvency at 1.07 and a debt per capita of €1,104.62. Table 5 reports the summary statistics of the control variables included in the regression model.

1.6. Analysis of results

We adopted the year of approval as a benchmark to establish the pre and post periods in order to analyse the performance of the indicators. For the Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations, the pre-implementation period is FY2010–2012 and the post-implementation period is FY2013–2016, because 2012 is the year in which this law came into force. In the SPSCA, the pre-implementation period is FY2010–2014 and the post-implementation period is FY2015–2016, because the SPSCA came into force in 2015. Table 6 shows the main results, using the output from the fixed effects regression model. This table includes the pre and post percentage change in the mean and standard deviation (SD) of each indicator in the Organic Law on Budgetary Stability and Financial Sustainability of Public Administrations (2012) and SPSCA (2015).

Table 6. Pre and Post Percent Change in the Organic Law on Budgetary Stability and Financial Sustainability of Public Administration indicators (2012), and SPSCA (2015) Mean and SD.

	Pct Chg in Mean	Pct Chg in SD	Evidence of…
Non-financial budgetary balance	0.19	-1.07^{+++}	Isomorphism
Public debt	-0.10*	0.07	Improvement
Average payment period	-0.38	-0.65^{+++}	Isomorphism
Current solvency	0.58**	-1.24^{++}	Improvement
Short-term Solvency	0.22	-1.16^{+++}	Isomorphism
Solvency ratio	0.42**	-0.81	Improvement
Debt per capita	-0.55	-0.07^{+++}	Isomorphism
Debt	-0.29	-0.13^{+++}	Isomorphism
Debt ratio	-1.63	-1.91^{+++}	Isomorphism
Cash flow	1.34**	0.35	Improvement

Statistical significance of the change in the mean is indicated with asterisks: *p<.05, **p<.01, ***p<.001, statistical significance of the change in the SD is indicated with a plus sign: +<.05, ++p<.01, +++p<.001, applying Bartlett's test.

According to the methodology, the percentage change in the mean was calculated using the parameter for the post-implementation variable, divided by the mean of the pre-implementation period. The residuals of the model were used in order to test the percentage change in SD. If an indicator shows a favourable change in the mean (for example, an increase in *non-financial budgetary balance* or a reduction in *public debt*), this is considered to be an improvement. If the mean indicator shows improvement, but the SD analysis shows something statistically significant ($p < 0.05$), improvement is supported. Hence, we analysed two tests: one focused on the mean, the other on the SD. The improvement hypothesis is accepted if the change in the mean is statistically significant ($p < 0.05$). The isomorphism hypothesis is accepted when a change in the mean is not statistically different from zero ($p \geq 0.05$) and there is a decline in the SD which is statistically significant ($p < 0.05$). Bartlett's test and Levine's test revealed similar results. As can be seen in Table 6, in most cases, for both types of indicators, it can be concluded that there is isomorphism. This means that after the implementation of the new indicators (2012 and 2015), six out of ten indicators did not produce any beneficial changes in the mean. However, the behaviour of public debt, current solvency, solvency ratio, and cash-flow indicators suggests the existence of improvement in post- implementation. In other words, around 60% of indicators present isomorphic behaviour. Specifically, two out of three indicators show isomorphism for

the Organic Law on Budgetary Stability and Financial Sustainability, and four out of seven indicators in the case of SPSCA.

Table 7 shows the percentage change (it is calculated as (Post-Pre)/Pre*100) in the interquartile range of each indicator from the pre- to post-implementation periods. These results confirm the conclusion stated above which supports the isomorphism hypothesis. IQR is a measure of statistical dispersion that studies variation among the mid-50% of the LG distribution. In this table, seven out of ten indicators show that there is no advantageous behaviour after the introduction of the new indicators. Specifically, for the Organic Law on Budgetary Stability and Financial Sustainability, two out of three indicators confirm the isomorphism hypothesis. For SPSCA, five out of seven indicators support isomorphism.

Table 7. Pre and Post Percent Change in the Organic Law on Budgetary Stability and Financial Sustainability of Public Administration indicators (2012), and the SPSCA (2015) Interquartile Range.

	Pct Chg in IQR	Evidence of Isomorphism?
Non-financial budgetary balance	-31.28	Yes
Public debt	24.86	No
Average payment period	-4.11	Yes
Current solvency	-13.60	Yes
Short-term Solvency	-23.85	Yes
Solvency ratio	68.68	No
Debt per capita	-7.44	Yes
Debt	-28.58	Yes
Debt ratio	-15.94	Yes
Cash flow	71.84	No

We have also found evidence of some LGs applying strategic behaviour by adopting an isomorphism with a decoupling perspective, exploiting indebtedness limits to the maximum in order to gather more financial resources for a better provision of services to citizens. We have compared the evolution of LG debt indicators with a higher level of indebtedness, focusing on *public debt*, *debt per capita* and *debt ratio* with indicators whose numerator is composed of liquid funds (*current solvency* and *short-term solvency*). An increase in liquid funds could mean that LGs have more financial resources as a consequence of new borrowing transactions, maximising their level of indebtedness within limits established by law. After analysing the evolution of

the LGs with a higher level of debt, there is evidence that some LGs have increased their solvency ratios as a result of an increase in liquid funds, which would support the perspective of mimetic isomorphism and decoupling.

1.7. Discussion

The main objective of this article was to test the effectiveness of Spanish legislation enacted for the fulfilment of Eurozone financial condition requirements. Since the reform of the Spanish Constitution in 2011, whose objective was to reduce public debt and to curb public expenditure, the financial control of public administration activities (especially the LGs) has intensified due to new financial sustainability requirements enforced by the central government, with a fixed timetable of financial reporting established by law, and creating a dual requirement, the fulfilment of financial sustainability and the disclosure of this information. The requirements include indicators for the regular assessment of the LGs' financial situations, in order to strengthen budgetary and financial discipline, and the disclosure of all of this information on the official Spanish Ministry of Finance website. Spanish legislation requires LGs to both reach the financial thresholds established by the Eurozone and to disclose this information for benchmarking. For these purposes, we have analysed whether Spanish legislation (Law on Budgetary Stability and SPSCA) has led to improvement or isomorphism behaviours, after the implementation of those legal requirements.

Although Law 2/2012 is mandatory for everyone and the fact that all LGs should have improved their financial situation to the minimum levels required by this law in order to meet legal requirements, some have reached this goal and others have not, some have improved more and others less. Our hypothesis is based on the fact that these differences can be explained because the effect of the trend towards the average is generated by the disclosure of information which makes that comparison between peers possible and improves the situation of those with worse financial health. The trend towards the average of LGs with poor financial ratios could be explained as a consequence of two possible perspectives: as an emulation of those LGs with better management (mimetic isomorphism) or because they are harnessing the maximum limits of indebtedness allowed by the law (mimetic isomorphism and decoupling,

disclosing information). This means that LGs could move towards the limits to be seen as fulfiling the regulation, without the need of greater efforts or maximising their available resources. The average approach (mimetic isomorphism and decoupling, disclosing information) can promote also to healthy performers to move towards the average rather that maximise the financial situation. In sum, the improvement approach is related to the importance of the disclosure part and the average approach, to the importance of determining limits by law.

The empirical results suggest that, in seven out of ten indicators of the study, the isomorphism approach is stronger than the improvement approach. The analysis shows that a high proportion of indicators converges towards the average, which confirms isomorphism. There are two exceptions: the public debt indicator and solvency ratio. Public debt had a satisfactory and positive evolution because, after the implementation of the requirements and the disclosure of indicators, the results show that public debt decreased in all cases. Public debt and the solvency ratio are limited by Eurozone requirements and their variations are under the close scrutiny of the Ministry of Finance. In the case of budgetary stability and public debt indicators, when a breach occurs the law imposes corrective actions (*eco-financial plan*) to remove the financial instability. Therefore, although it converges towards the mean, it is confirmed that corrective actions have been required to redirect the financial situation towards Eurozone thresholds.

That means that both low-performing and high-performing LGs converge to the mean, which does not guarantee the fulfilment of Eurozone requirements. So, there are beneficial effects of the requirements implemented by the law on the alignment of Spanish LGs' financial conditions with Eurozone requirements. These results are consistent with those presented in the seminal article by DiMaggio and Powell (1983), as well as the one by Gerrish and Spreen (2017). In this line, isomorphism could be a result of trying to implement best practices and not only aiming to implement them.

A new paradigm for LGs is emerging in a society in which citizens are demanding discipline in the management of public funds after years of corruption and instability which was a partial reason for the Spanish financial crisis. All economic players mandate stringent financial control: citizens want to know how much and in what way tax money is spent. Likewise, the EU needs to know if Spain meets its financial

obligations because such control is linked to the general interests of that country's economy and the EU. The control of financial risk is required as a preventive measure, so that LGs are able to restore their financial situation through corrective actions, such as eco-financial plans to avoid a relapse into financial instability.

Much remains to be done in the area of financial risk control, but all signs suggest that working with discipline, responsibility and commitment, and the use of efficient and appropriate reporting tools should improve the financial situation. Disclosure benchmarking helps governments to make comparisons, but requirements are also needed. An analysis of the common traits in the financial situations of those LGs which approved eco-financial plans following legal requirements and those that did not would make for interesting future research. Approval of the Budgetary Stability Law and the Law on Transparency has facilitated access to public bodies and allowed a dataset of LG indicators to be built; this marks the beginning of new opportunities to investigate this topic.

1.8. Conclusions

This article analyses the effect of introducing new requirements in Spanish law that are approved by the central government to reduce public debt and curb public expenditure by LGs up to the thresholds required by the Eurozone, causing a dual requirement: the fulfilment of financial sustainability and the disclosure of this information. It allows a comparison between LGs, allowing for a benchmarking process with respect to improvement. Spain which is a decentralised country, thus belongs to the group of states that monitor the financial health of their local governments by using compulsory indicators which are regularly reported according to the applicable laws in order to enhance transparency. For these purposes, two hypotheses were tested in the Spanish case, based on the isomorphic or improvement approaches, and regarding the effect of both the entry into force of financial indicators for LGs and their required disclosure. The evidence supports the isomorphic approach, except for *public debt* and the *solvency ratio* which are critical indicators under specific scrutiny by the Spanish Ministry of Finance and the EU. These results confirm the effectiveness of the disclosure of indicators for benchmarking purposes because, although corrective actions are taken to redirect the financial situation, the effect converges towards the mean. In

the Spanish case, the results can be considered beneficial because the compulsory passing of a law on financial indicators has moved the threshold of the indicators' mean over the limits required by the EU. The results also support the effectiveness of the new reporting requirements enforced by the abovementioned legislation to restore public debt and public expenditure to the limits established by the EU for Spain, because the analysis finds improvements in the means of both indicators that coexist with a general isomorphic effect. Those LGs with poor financial indicators improve over time, whereas LGs with healthy ratios decline towards the mean, offsetting poor performers at the mean of the distribution. Both results – the improvements brought about by the passing of a law on new reporting requirements, which have increased the mean of critical indicators identified in those laws and the isomorphic effect between LGs – both have implications for evaluating the performance of laws and benchmarking programmes.

We should note that although the term improvement is used in contrast to isomorphism, they are not mutually exclusive. In fact, isomorphism would likely result in LGs, both above and below the mean, converging towards the mean, implying improvement for some governments. For example, local governments with high liquidity ratios may be withholding valuable resources from the local economy; spending accumulated reserves would likely benefit the local economy (Gerrish and Spreen, 2017). Notwithstanding, the isomorphism evidence justifies the need for introducing legal requirements in order to make sure that all indicators achieve the minimum values required by law. In our study we include (besides mimetic isomorphism trough imitation) another possibility of explaining why LGs with a worse financial position tend towards the average: disadvantaged LGs are availing maximum indebtedness limits in order to gain more financial resources as a consequence of better quality in the provision of services to citizens. The mandatory disclosure of financial information with a reporting requirement schedule creates pressure on LGs as their financial health is shown to society, something which could help to restore their reliability after years of irresponsible management in the years prior to the 2008 global crisis. Disclosure of financial information contributes to improve the decision-making processes as a consequence of the increased availability of public financial information, something which makes it possible for them to compare their own financial evolution, and compare it with other LGs with similar characteristics. Our study highlights the dual implementation by the government consisting in evaluating the financial situation

of government entities and disclosure of this information in a decentralised country, adding the advantage of applying the knowledge which emanates from the disclosure of financial information. In this way, each LG can be compared with itself in order to understand its financial evolution and also with other LGs to find similarities. Our evidence suggest, that the fact that the disclosure of financial information is public and may be also consulted by any stakeholder reinforces the responsibility in the LGs' general interest, which allows us to conclude that positive feedback exists, thus building a new era for Spanish LGs, and showing the great effort of restoring the responsible management of public administration by enhancing the transparency of their activities.

CHAPTER 2: TESTING THE RELIABILITY OF FINANCIAL SUSTAINABILITY. THE CASE OF SPANISH LOCAL GOVERNMENTS

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Abstract

Local Governments (LGs) have strengthened the financial control as a consequence of mandatory requirements to ensure financial sustainability in their management. The aim of this study is to determine whether financial indicators about financial conditions defined in Spanish regulation are backed by worldwide generally accepted financial benchmarking indicators. For this purpose, we analyse the relationship between Spanish indicators of financial sustainability based on European Union (EU) regulations and Financial Trends Monitoring System Indicators (FTMS) of the International City/County Management Association (ICMA). For this purpose, two methodologies are applied: discriminant analysis and logistic regression, where the dependent variables are each of the Spanish financial indicators and the independent variables are ICMA indicators. The evidence supports that variables that are related to the control of expenditures, debt and the revenues show a greater explanatory power of financial sustainability, being the most important elements which offer relevant information about the financial sustainability measurement of LGs.

2.1. Introduction

The decline of public finances due to the global crisis in 2008 highlighted the lack of fiscal discipline of different levels of administration, emerging situations of financial instability. The financial crisis provided an opportunity to define the bases of financial sustainability good practice guidelines in order to control the use of public funds and indebtedness of governments around the world. Sustainability management is introduced to transform how governments implement public policies and deliver public services (Zeemering, 2018). It opens a new financial scenario for all administration layers including Local Governments (LGs) based on a universally accepted principle: financial sustainability, which is related to the likelihood of failure for LGs with liabilities and debts. The mechanism, applied by countries at the international level to control LGs' financial health, is a benchmark, distinguishing between a *voluntary local self-management*, without intervention from the state, *compulsory hierarchical management*, in which the design of the performance indicators takes place under the supervision of the central government and a *vertically co-ordinated management* with a co-operating between central and local governments (Kuhlmann and Jäkel, 2013). The mandatory requirements seek the reduction of public sector costs and debt by achieving responsible management through the periodical assessment of the financial position. Nowadays, a challenge for governments is to define indicators that can provide a reliable measurement of the financial condition to be calculated, disclosed and reported to the central government by municipal managers. Next to the evaluation of fiscal health, governments also establish corrective actions to redirect financial situations. The International City/County Management Association (ICMA) produced a prestigious publication in the 1980s (Groves and Valente, 1986) about the evaluation of financial condition for LGs of the United States (US), based on the financial condition defined by Groves *et al.* (1981), which refers to the capacity of a government to provide the level and quality of services required for the welfare of a community. In the fourth edition (in 2003) of Evaluating *Financial Condition: A Handbook for Local Government* (Nollenberger *et al.*, 2003), the publication revised the Financial Trend Monitory System (FTMS), offering a tool composed of 42 indicators to be considered for a comprehensive evaluation of the financial condition in LGs that includes the calculation of indicators and how to read them, providing interesting information to local

administration managers, which have become a worldwide benchmark applied on most relevant empirical works to measure financial condition.

European Union (EU) policymakers have also chosen financial sustainability as a tool to track the fiscal condition of countries that belong to the Eurozone, establishing requirements for setting up the limits for governments' deficit and debt, by the reform of the agreement of Stability and Growth Pact (SGP) in 2011, in order to ensure the stability of the Economic and Monetary Union (EMU). The SGP establishes the due process for the monitoring of the fiscal conditions of State members, which includes the procedure to be followed when a member breaches the SGP, with the adoption of an Excessive Deficit Procedure (EDP) that requires corrective actions in the case of exceeding the budget deficit allowed by the EU.

In Spain, LGs have full fiscal autonomy to approve their own budget of expenditures and revenues, establishing and collecting taxes, and borrowing from banks and markets. Therefore, in order to maintain LGs finance within the framework of SGP-EU requirements, the Spanish central government has transposed the financial sustainability requirements established by the EU to the Spanish LG arena (The Organic Law on Budgetary Stability and Financial Sustainability, 2012) with the purpose of monitoring how each LG performs across several financial indicators. Regulatory requirements establish how and when to evaluate the situation. The Spanish Ministry of Finance website publishes a set of financial indicators for each LG, and makes them available in an online database, as a category of Open Government Data (OGD).

The objective of this article is to evaluate whether the way to measure the financial condition of LGs in Spain by transposing the SGP of the EU requirements is a fair and reliable tool for measuring the LGs' financial condition. For this purpose, the relationship between the Spanish financial sustainability indicators for LGs and the ICMA worldwide generally accepted benchmarking indicators is analysed. For this reason, we identify what common concepts are evaluated by generally accepted benchmarking in order to measure the financial sustainability and the research question of the analysis is to test if Spanish financial indicators are in line with worldwide definitions of financial sustainability.

Discriminant analysis and logistic regression methodology are applied to identify the ICMA indicators which have a higher discriminant power to define the financial condition of Spanish municipalities in a database which consists of four Spanish indicators and 18 ICMA financial indicators produced annually by 143 local governments from 2010 to 2017.

This paper can contribute to country policymakers not only to assist managers in the design of indicators that measure financial sustainability, but also to allow the comparison at the international level using benchmarking.

The article is organised as follows: Firstly, the background regarding the assessment of LG financial risks. Secondly, the variables and methodology are described. Thirdly, the analysis of the results is shown. Finally, discussion and conclusions are drawn.

2.2. Literature Review

For López-Subirés *et al.* (2019), the financial sustainability is a key dimension in the management of governmental organizations in many parts of the world, the monitoring of financial risk being one of the most important challenges to promote the transparency of local administration. Therefore, LG's managers and/or governments aim to find a fair and reliable model based on indicators to be able to measure the financial condition in order to achieve an alert system tool. They are also interested in determining the factors that most influence disclosure about sustainability because this information would help them to design measures to improve their management and communication of sustainability (Navarro Galera *et al.*, 2018).

Academic literature shows multiple approaches to define financial risk in LGs such as: financial condition (Mead, 2001), fiscal health (Hendrick, 2004), or fiscal distress (Kloha et *al.*, 2005). The common factor in all definitions of financial risk is that when LGs have liabilities and debts, a likelihood of failure exists. To face that likelihood, supranational institutions, such as Eurostat for the European Union (EU) countries, have set up deficit and indebtedness limits to EU countries. Consequently, some EU central governments have issued domestic legal requirements and/or transposed the Eurostat requirements to their own domestic legal framework in order to limit the indebtedness

of LG based on the European System of Accounts' (ESA) concept of net lending/net borrowing, and other broader concepts such as solvency or liquidity of LGs.

There are several countries that have developed Performance Measurement Systems (PMS). The most used is the Financial Trends Monitoring System (FTMS) of the International City/County Management Association (ICMA) from the United States, which explains the financial condition as the ability to maintain existing service levels, resistance to local and regional disruptions, and meeting the demands of natural growth, decline, and change. FTMS classifies indicators in six groups: revenues, expenditures, operating position, debt, unfunded liabilities and capital plant.

Other accepted benchmarking tools are the alert system of the Canadian Institute of Chartered Accountants, next to the Ministry of Municipal Affairs and Housing of Canada which produced the Financial Information Returns (FIR) to measure the financial condition through a schedule of reporting requirement or the ratios included in the Comprehensive Annual Financial Report of the GASBS 34 (Governmental Accounting Standards Board), which measures financial assets, debt limit, surplus and relationship between expenses and revenues.

Several authors seek to explain what variables reveal useful information about the financial condition in LGs. Ryan *et al.* (2000) analyse the case of Australia, where the financial framework of local governments is mainly composed of the Australian Accounting Standard 27 (AAS 27) Financial Reporting by Local Governments, and conclude that the key financial performance indicators about fiscal sustainability should encompass four dimensions: own source revenue reliance, revenue flexibility/intensity, indebtedness and liquidity.

Andrews (2013) studies the amalgamations the case of England and Wales, defining the indicators of financial sustainability such as expenditures per capita, fiscal risk: analyzing the proportion of the overall expenditure that is funded via local property tax rather than central government transfers, or the "self-income ratio" (Carmeli, 2002), fiscal slack: absorbed or unabsorbed resources that can be appropriated by senior managers to meet new demands of the organization (Singh, 1986) and fiscal balance.

In the case of local councils in Ireland, Turley *et al.* (2015, 2016) apply the Brown's assessment tool (Brown, 1993) used to measure the financial condition of small cities in the US composed of 14 financial indicators, which measure: liquidity, autonomy, operating performance, collection efficiency and solvency, obtaining a classification of the financial performance of councils, providing interesting results as some entities considered as "good" performers in the media appear as those in the best-performing group overall.

Table 8 shows a collection of studies aimed at determining the variables which better explain the financial condition in LGs. On one hand, Blore *et al.* (2012), Kioko (2013), Navarro Galera *et al.* (2016) and Gorina *et al.* (2018), conclude that indicators which relate revenues and expenditures provide better predictive power of the financial condition. Cabaleiro *et al*. (2012) find that the function that best allows for the classification of municipalities according to their financial health includes those indicators related to debt and revenues, while Cabaleiro and Buch (2014) reveal the relationship between the tax effort and financial condition. Trussel and Patrick (2018) support that financial risk is related to debt service, and other authors such as Bulai *et al*. (2019), suggest that the level of affluence can be an essential component of a measure of financial sustainability. The literature also shows a solvency approach as a good instrument for evaluating financial conditions, as Zafra *et al.* (2009) support, applying short-run solvency, budgetary flexibility solvency and service-level solvency as elements of the financial condition. Another way of measurement is developed by Navarro Galera *et al.* (2017, 2020), who propose a system based on Basel II criteria, establishing four aspects to measure the probability default (PD) of LGs: cash surplus for overheads, legal borrowing limit, solvency (current assets/current liabilities) and gross budget savings (current revenue/current liabilities). However, Clark (2015) asserts that the Financial Condition Index (FCI), which is a framework for evaluating financial condition developed by Groves *et al.* (1981) based on cash solvency, budget solvency, long-run solvency and service solvency, is not the most appropriate tool for measuring financial condition at the local level.

Table 8. Significant variables included in the conclusion of financial condition study by author.

Authors	Significant variables
Bulai *et al.* (2019)	Level of affluence: entities that are more fluent may be better equipped to handle a potential downturn in local government finances.
Blore *et al*. (2012)	Revenues mobilisation, or how mobilise more money (enhancing tax revenues and exploiting charges better) expenditure management through budgeting and expenditure management and cost management and control.
Cabaleiro *et al.* (2012)	Long term debt, net current budgetary revenues divided by budget obligations from nonfinancial current expenditures minus debt service, net current budgetary revenues divided by net budget obligations, direct and indirect taxes and fees divided by net budget obligations from current expenditures. Direct and indirect taxes and fees divided by net budgetary revenues from current operations.
Cabaleiro and Buch (2014)	Tax effort.
Gorina *et al.* (2018)	Cash solvency, long term solvency, revenue structure.
Groves *et al*. (1981)	Cash solvency budget solvency long-run solvency service solvency.
Kioko (2013)	Revenues, expenses, assets and liabilities.
Navarro Galera *et al.* (2016)	Income statement.
Navarro Galera *et al.* (2017, 2020)	Default 1: cash surplus for overheads. Default 2: legal borrowing limit (capital or current debt). Default 3: solvency (current assets/current liabilities). Default 4: gross budget savings (current revenue/current liabilities).
Trussel and Patrick (2017)	Debt service.
Zafra *et al.* (2009)	Short-run solvency budgetary flexibility solvency service-level solvency.

The revision of previous literature allows us to conclude that there are similarities in the different financial measurement systems, because the indicators studied, strive to measure the same concepts. The different ways to measure financial sustainability, distinguish four main groups of indicators: evaluation of expenditures, evaluation of

revenues, evaluation of debt and evaluation of cash, which is in line with the main groups of evaluation that ICMA establishes in the definition of the financial indicators applied on LGs. Table 9 shows a summary of four elements that can be defined, as a conclusion from the previous review, that are applied by authors and are accepted worldwide financial sustainability tools.

Table 9. Main groups of indicators to evaluate financial sustainability by author and worldwide systems.

Expenditures	Revenues	Debt	Cash
Cabaleiro *et al*. (2012) Kioko (2013)	Blore (2012) Cabaleiro *et al*. (2012) Kioko (2013) Cabaleiro and Buch (2014)	Cabaleiro *et al*. (2012) Trussel and Patrick (2017) Navarro Galera *et al.* (2017, 2020)	Groves *et al.* (1981) Gorina *et al*. (2018) Zafra *et al*. (2009) Navarro Galera *et al*. (2017, 2020)
ICMA indicators (US) FIR indicators (Canada)	ICMA indicators (US) FIR indicators (Canada) AAS 27 indicators (Australia)	ICMA indicators (US) FIR indicators (Canada) AAS 27 indicators (Australia)	ICMA indicators (US) AAS 27 indicators (Australia)

2.3. The Spanish Legal Framework

The legal financial framework of Spanish LGs is made up of a set of regulations that have developed requirements from different perspectives to control the financial sustainability of LGs. It consists of a package of actions introduced after the 2008 financial crisis in order to curb public expenditure and to reduce the annual deficit and debt. As a Eurozone member, Spain had to approve a regulatory framework consistent with EU requirements to achieve specific commitments towards getting back on the road to growth. As a consequence of pressure from the EU, Article 135 of the Spanish Constitution was modified by socialist president Zapatero and the Organic Law on Budgetary Stability and Financial Sustainability was enacted in 2012. This act establishes the requirements to be met by LGs in order to ensure their financial sustainability. It provides important requirements based on a set of principles about budgetary stability and financial sustainability, and establishes a legal basis applicable to the different layers of the public administration. According to the Organic Law on Budgetary Stability and Financial Sustainability, all Spanish public sector entities have to meet the following principles: budgetary stability, financial sustainability, multi-

annuity investments, transparency, efficiency in allocation and use of public resources, responsibility, institutional loyalty, and the development of mechanisms for the coordination and application of the law. Budgetary stability is linked to the present control of financial risks which arose in the context of the 2008 financial crisis as an important requirement for LGs, assuming that is a challenge to LGs, which are introducing reforms in order to better manage (Meneguzzo *et al.*, 2013).

The Organic Law on Budgetary Stability and Financial Sustainability establishes a legal mechanism called reporting requirements which provides a schedule for different analyses of the financial position of LGs for monitoring their financial health. LGs have to report about budgetary stability and financial sustainability over the year. LGs must upload the information shown onto the Ministry of Finance's website entitled "Virtual office of financial coordination of local entities" using the XML taxonomy.

Therefore, budgetary stability offers another scenario composed of three indicators: *budgetary stability, expenditure rule* and *public debt*. *Budgetary stability* is defined as the net lending or net borrowing adjusted, i.e., the higher the surplus, the better the issuer can cope with debt payments (Padovani, 2018). *Expenditure rule* measures the growth of the expenditure of public administrations cannot exceed the reference rate of growth of the medium-term GDP of the Spanish economy. *Public debt* represents the nominal value of outstanding liabilities of public administrations at the end of the fiscal year which is made up of: deposits, debt bonds and loans, according to ESA 2010 definitions. When a breach occurs, the law imposes corrective actions to avoid a relapse into financial instability. In these cases, the entities which fail to meet the cap limit of each indicator must elaborate an *eco-financial plan* aimed at recovering financial stability over the next two fiscal years to be approved by a fiscal authority.

2.4. Variables

According to the Organic Law on Budgetary Stability and Financial Sustainability, the analysis is focused on *budgetary stability, expenditure rule, public debt* and *eco-financial plan indicators*.

These indicators will be the variable dependents, which are dummy variables with value 1 if the variable indicates that the LG fails to meet the limits of the indicators, and 0 otherwise.

The selection of independent variables was approached with the indicators developed by the International City/County Management Association (ICMA) with the Financial Trends Monitoring System (FTMS). ICMA defines the financial condition as the ability to maintain existing service levels, resistance to local and regional disruptions, and meeting the demands of natural growth, decline, and change. The set of ICMA indicators is a procedure recommended to monitor the financial trends in LGs being a tool to help decision-making processes. ICMA's tool consists of a total of 42 quantifiable indicators (Table 10) used to evaluate the financial condition, categorised into different areas: financial, environmental and organizational factors.

Table 10. Financial Trends Monitoring System Indicators of International City/County Management Association.

Area	Factors	Indicator
Financial indicators	**Factor 1 Revenue indicators**	*Indicator 1 Revenues per capita* *Indicator 2 Restricted revenues* Indicator 3 Intergovernmental revenues Indicator 4 Elastic revenues *Indicator 5 One-time revenues* Indicator 6 Tax revenues *Indicator 7 Uncollected property taxes* Indicator 8 User charge coverage *Indicator 9 Revenue shortfalls or surpluses*
	Factor 2 Expenditure indicators	*Indicator 10 Expenditures per capita* Indicator 11 Expenditures by function Indicator 12 Employees per capita *Indicator 13 Fixed cost*
	Factor 3 Operating position indicators	Indicator 14 Fringe benefits *Indicator 15 Operating deficit or surplus* Indicator 16 Enterprise operating position Indicator 17 Fund balances *Indicator 18 Liquidity*
	Factor 4 Debt indicators	*Indicator 19 Current liabilities* *Indicator 20 Long term debt* *Indicator 21 Debt service* Indicator 22 Overlapping debt
	Factor 5 Unfunded liability indicators	Indicator 23 Pension obligations Indicator 24 Pension assets Indicator 25 Post employment benefits
	Factor 6 Capital plant indicators	Indicator 26 Maintenance effort Indicator 27 Capital outlay
Environmental indicators	**Factor 7 Community needs and resources indicators**	*Indicator 28 Population* *Indicator 29 Population density* *Indicator 30 Population under 18 and over 64* *Indicator 31 Personal income per capita* Indicator 32 Poverty households or public assistance recipients Indicator 33 Property value Indicator 34 Top five taxpayers Indicator 35 Home ownership *Indicator 36 Vacancy rates* *Indicator 37 Crime rate* Indicator 38 Employment base Indicator 39 Business activity

	Factor 8 Intergovernmental constraints	Indicator 40 Mandated activities Indicator 41 Restrictions on fiscal powers
	Factor 9 Disaster risk	Indicator 42 Disaster risk
	Factor 10 Political culture **Factor 11 External economic conditions**	

Financial factors show different sections defining a set of indicators aim at capturing from different perspectives the concepts of revenues, expenditures, operating position, debt structure, unfunded liabilities or condition of capital plant. The relevance of each indicator may be different according to the legal and economic framework of LGS. Environmental factors provide us with information about community needs and resources, intergovernmental constraints, disaster risk, political culture and external economic conditions. Financial and environmental factors are linked to management practices and legislative policies.

ICMA debt indicators are similar to the Spanish *public debt* indicator, particularly *Indicator 21 Debt service*, which relates debt with revenues. ICMA indicators study revenues, on the one side, and expenditures, on the other side, but do not have an indicator that connects the difference between them, so it is not possible to find an indicator similar to *budgetary stability*. As for the *expenditure rule indicator*, there is not an ICMA indicator that links the expenditure of the current year with the expenditure in the previous year.

In the study, we use the ICMA indicators for Spanish LGs by using the formula provided by ICMA's book—*Evaluating financial condition: A Handbook for Local Government* (Nollenberger *et al.*, 2003). It is not possible to calculate the totality of 42 ICMA indicators because, in the case of some indicators, there is not an equivalence of the indicator in Spanish financial reports; consequently, 22 ICMA indicators were estimated. Table 10 show in italics the 18 ICMA indicators which were applied in the analysis, after removing four indicators because of high multicollinearity. Descriptive statistics (see Table 11) were calculated for every indicator, where we can appreciate on average that *revenues per capita* is 957,372 Euros and e*xpenditures per capita* is 278,906 Euros.

Table 11. Descriptive Statistics.

	N	Mean	Std. Dev.	Min.	Max.
Revenues per capita	996	957.372	1142.672	0.000	36200.764
Restricted revenues	996	0.079	0.089	−0.028	0.523
One-time revenues	996	0.027	0.056	−0.071	0.468
Uncollected property taxes	996	0.324	4.800	0.000	144.498
Revenue shortfalls or surpluses	996	1.407	0.881	0.000	27.054
Expenditures per capita	996	278.906	1445.815	−1715.464	37517.232
Fixed cost	995	0.410	0.086	0.000	0.907
Operating deficit or surplus	996	0.144	0.099	−0.529	0.889
Liquidity	993	0.703	2.024	−2.675	45.702
Current liabilities	996	0.498	0.629	−0.925	6.469
Long term debt	996	635.377	921.917	0.000	25489.469
Debt service	996	0.106	0.083	0.000	1.807
Population	996	1252.710	2466.863	0.000	18894.934
Population density	996	64158.552	119889.214	0.000	1314474.000
Population under 18 and over 64	996	10554.222	1807.597	0.000	13436.000
Personal Income Per Capita	996	0.170	0.081	0.020	0.499
Vacancy Rates	996	46.232	11.946	0.000	68.000
Crime Rate	996	957.372	1142.672	0.000	36200.764

As a result, Table 12 includes a summary of the dependent and independent variables which were determined for the models.

Table 12. Variables included in the models.

Variables	Model-Indicator number	Indicator	Abbreviation
Dependent variables	Model 1	*Budgetary stability*	*BudStab*
	Model 2	*Expenditure rule*	*ExpRule*
	Model 3	*Public debt*	*PubDebt*
	Model 4	*Eco-financial plan*	*EFP*
Independent variables	*Indicator 1*	*Revenues per capita*	*RevCap*
	Indicator 2	*Restricted revenues*	*RestRev*
	Indicator 5	*One-time revenues*	*OneTRev*
	Indicator 7	*Uncollected property taxes*	*UncollPropTax*
	Indicator 9	*Revenue shortfalls or surpluses*	*RevShortSurp*
	Indicator 10	*Expenditures per capita*	*ExpCap*
	Indicator 13	*Fixed cost*	*FixedCost*
	Indicator 15	*Operating deficit or surplus*	*OpDefSurp*
	Indicator 18	*Liquidity*	*Liq*
	Indicator 19	*Current liabilities*	*CurrLiab*
	Indicator 20	*Long term debt*	*LTDebt*
	Indicator 21	*Debt service*	*DebtServ*
	Indicator 28	*Population*	*Pop*
	Indicator 29	*Population density*	*PopDens*
	Indicator 30	*Population under 18 and over 64*	*Pop1864*
	Indicator 31	*Personal income per capita*	*PersIncomCap*
	Indicator 36	*Vacancy rates*	*VacRates*
	Indicator 37	*Crime rate*	*CrimeRate*

In this way, the models which link Spanish and ICMA indicators are:

$$M1: BudStab_i=\beta_0+\beta_1 RevCap+\beta_2 RestRev+\beta_3 OneTRev+\beta_4 UncollPropTax+\beta_5 RevShortSurp+\beta_6 ExpCap+\beta_7 FixedCost+\beta_8 OpDefSurp+\beta_9 Liq+\beta_{10} CurrLiab+\beta_{11} LTDebt+\beta_{12} DebtServ+\beta_{13} Pop+\beta_{14} PopDens+\beta_{15} Pop1864+\beta_{16} PersIncomCap+\beta_{17} VacRates+\beta_{18} CrimeRate$$

$$M2: ExpRule_i=\beta_0+\beta_1 RevCap+\beta_2 RestRev+\beta_3 OneTRev+\beta_4 UncollPropTax+\beta_5 RevShortSurp+\beta_6 ExpCap+\beta_7 FixedCost+\beta_8 OpDefSurp+\beta_9 Liq+\beta_{10} CurrLiab+\beta_{11} LTDebt+\beta_{12} DebtServ+\beta_{13} Pop+\beta_{14} PopDens+\beta_{15} Pop1864+\beta_{16} PersIncomCap+\beta_{17} VacRates+\beta_{18} CrimeRate$$

$$M3: PubDebt_i=\beta_0+\beta_1 RevCap+\beta_2 RestRev+\beta_3 OneTRev+\beta_4 UncollPropTax+\beta_5 RevShortSurp+\beta_6 ExpCap+\beta_7 FixedCost+\beta_8 OpDefSurp+\beta_9 Liq+\beta_{10} CurrLiab+\beta_{11} LTDebt+\beta_{12} DebtServ+\beta_{13} Pop+\beta_{14} PopDens+\beta_{15} Pop1864+\beta_{16} PersIncomCap+\beta_{17} VacRates+\beta_{18} CrimeRate$$

$$M4: EFP_i=\beta_0+\beta_1 RevCap+\beta_2 RestRev+\beta_3 OneTRev+\beta_4 UncollPropTax+\beta_5 RevShortSurp+\beta_6 ExpCap+\beta_7 FixedCost+\beta_8 OpDefSurp+\beta_9 Liq+\beta_{10} CurrLiab+\beta_{11} LTDebt+\beta_{12} DebtServ+\beta_{13} Pop+\beta_{14} PopDens+\beta_{15} Pop1864+\beta_{16} PersIncomCap+\beta_{17} VacRates+\beta_{18} CrimeRate$$

The sample contains Spanish LGs with a population greater than 50,000, a total of 143 local entities with information from 2010 to 2017; the main sources of information were the "Virtual office of financial coordination of local entities" website and the Spanish National Audit Office website. For each LG, ICMA indicators were calculated and Spanish indicators were gathered from 2010 to 2017. The statistical software used in the empirical research was SPSS Statistics 24.

Hypotheses Tested

From the main conclusion of the revision of previous literature, we identify different ways to measure financial sustainability and distinguish four main groups of indicators, which allows us to base the study on the following hypotheses which are verified by empirical analysis:

Hypothesis 1 (H1): *Financial sustainability of LGs may be measured by the evaluation of expenditures.*

Hypothesis 2 (H2): *Financial sustainability of LGs may be measured by the evaluation of revenues.*

Hypothesis 3 (H3): *Financial sustainability of LGs may be measured by the evaluation of debt.*

Hypothesis 4 (H4): *Financial sustainability of LGs may be measured by the evaluation of cash.*

2.5. Methods

The methodology applied is discriminant analysis to test the discriminant power of indicators, because this methodology is recommended for models which have categorical character in their dependent variables and allow us to analyse the differences between groups and classify the LGs. The discriminant analysis aims to explain the belonging of each entity to one pre-established group or another. The concept of discrimination is established by Fisher (1936), although the origin begins with Pearson (1926) and Mahalanobis (1930). Discriminant analysis is useful to obtain classifiers to distinguish groups using variances and co-variances, already having predefined categories of response in order to build a model that helps in predicting the category or group, existing as a multivariate technique that studies the differences of categories established a priori, which allows a user to analyse the variables that contribute to

discriminate subjects in the different groups. The model is composed of a discriminant function based on linear combinations of predictor variables.

The discriminant function is:

$$D=\beta_0+\beta_1 RevCap+\beta_2 RestRev+\beta_3 OneTRev+\beta_4 UncollPropTax+\beta_5 RevShortSurp+\beta_6 ExpCap+\beta_7 FixedCost+\beta_8 OpDefSurp+\beta_9 Liq+\beta_{10} CurrLiab+\beta_{11} LTDebt+\beta_{12} DebtServ+\beta_{13} Pop+\beta_{14} PopDens+\beta_{15} Pop1864+\beta_{16} PersIncomCap+\beta_{17} VacRates+\beta_{18} CrimeRate$$

where $\beta_0 \ldots \beta_{18}$ are the discriminant coefficients.

The requirements of discriminant analysis are that the grouping variables (dependent variables) should be categorical variables with two values at least—in our study, default or non-default— while the independent variables should be continuous. This study seeks the relationship between the categorical variables: *budgetary stability*, *expenditure rule*, *public debt* and *eco-financial plan*, and the ICMA indicators (independent variables). In the analysis, we introduced all independent variables and applied the stepwise procedure in the discriminant analysis which shows only important variables selected based on Wilk's lambda, while redundant variables are discarded.

The previous assumptions of discriminant analysis to apply this methodology are: normality in the independent variables, linearity, no multicollinearity and equal variances. We assume, as a limitation, that financial variables are more likely to be highly skewed, and for these reasons, the variables would be transformed in order to achieve the previous assumptions. Although discriminant analysis is considered a robust technique that is not altered if any of the previous assumptions are not applicable, we also apply the methodology of logistic regression with panel data in order to complement the analysis of the variables. This methodology is less stringent than discriminant analysis and it is not necessary that independent variables are normally distributed or equal variances are assumed. In this way, in binary logistic regression, the dependent variable can only take two values: 1 if the LG defaults, 0 otherwise.

The formula of the linear function of the logistic regression model is:

$$Y=\beta_0+\beta_1 RevCap+\beta_2 RestRev+\beta_3 OneTRev+\beta_4 UncollPropTax+\beta_5 RevShortSurp+\beta_6 ExpCap+\beta_7 FixedCost+\beta_8 OpDefSurp+\beta_9 Liq+\beta_{10} CurrLiab+\beta_{11} LTDebt+\beta_{12} DebtServ+\beta_{13} Pop+\beta_{14} PopDens+\beta_{15} Pop1864+\beta_{16} PersIncomCap+\beta_{17} VacRates+\beta_{18} CrimeRate$$

where Y is each one of the dependent variables, and $\beta_0 \ldots \beta_{18}$ are the estimated coefficients and the logistic function is: $p = \frac{1}{1+e^{-Y}}$

where Y is the lineal function of the logistic regression model and e is the base of the Napierian logarithms (2.718).

2.6. Results

Robustness test

The previous assumptions of discriminant analysis to apply this methodology are: normality in the independent variables, linearity, no multicollinearity and equal variances. This means that these requirements must be checked in order to analyse the appropriateness of the sample in the application of methodology. To verify the normality for independent variables, we apply the Kolmogorov–Smirnov test. The result indicates a rejection of the null hypothesis, which means that the independent variables of our study do not follow a normal distribution, which is corrected with the log transformation of the variables that allow us to obtain a normal distribution. As for multicollinearity in the independent variables, we removed the indicators that show significant correlations: *tax revenues, poverty households or public assistance recipients, employment base* and *business activity*. Furthermore, we run Box's M test in order to observe the covariance matrices; the null hypothesis being the equality in the variance–covariance matrix, this test is sensitive in the absence of normality. The results confirm that the variance–covariance matrices are different, which indicates that this condition is not met (Table 13).

Table 13. Box's M test.

	Model 1 Budgetary Stability	**Model 2 Expenditure Rule**	**Model 3 Public Debt**	**Model 4 Eco-financial Plan**
Box's M	215.137	88.140	202.078	64.349
F-value	2.314	8.775	7.096	10.504
Significance	0.000	0.000	0.000	0.000

Having made this verification we have obtained a satisfactory sample which

meets the previous assumptions of discriminant analysis.

Analysis of results

Discriminant analysis is a statistical procedure that offers several interesting outputs to study. Firstly, the Eigenvalue value indicates how well the function differentiates the groups, where the greater the value, the more effective the power of classifying the groups. Table 14 shows the results of this parameter for each model in which the highest value is for *Model 3 Public debt* with 0.538, being also the highest value of canonical correlation which ranges from 0 to 1, with a value of 0.591.

Table 14. Eigenvalues.

	Model 1 Budgetary Stability	**Model 2 Expenditure Rule**	**Model 3 Public Debt**	**Model 4 Eco-financial Plan**
Eigenvalue	0.160	0.097	0.538	0.128
% of Variance	100	100	100	100

Secondly, the main parameter which characterizes the study of the database in the discriminant analysis is represented in Table 15 with Wilk's Lambda test that measures the discriminative power independent variables. The range of plausible values is between 0 and 1. A value close to 0 would mean that groups are different and the discriminant function based on the ICMA variables can adequately predict financial health defined by financial indicators based on the Spanish legislation.

Of the four models, Model 3 of Public Debt shows the value closest to 0, Chi-square reveals that it is statistically significant.

Table 15. Wilk's Lambda

	Model 1 Budgetary Stability	**Model 2 Expenditure Rule**	**Model 3 Public Debt**	**Model 4 Eco-financial Plan**
Wilks' Lambda	0.862	0.912	0.650	0.887
Chi-Squared	143.702	90.154	416.102	117.473
Significance	0.00	0.00	0.00	0.00

Standardised Canonical Discriminant Function Coefficients (see Table 9) show the ICMA indicators with a higher power for each model. The biggest recurring ICMA

indicator in different models is *Indicator 1 Revenues per capita*, *Indicator 9 Revenue shortfalls or surpluses*, *Indicator 10 Expenditures per capita*, *Indicator 15 Operating deficit or surplus*, *Indicator 19 Current liabilities*, *Indicator 20 Long term debt* and those related to population. This means that there is a powerful relationship between Spanish indicators and these indicators of ICMA, which could be pooled into three main groups of indicators: that link revenues (*Indicator 1* and *Indicator 9*), that link expenditures (*Indicator 10* and *Indicator 15*) and that link debt (*Indicator 19* and *Indicator 20*), which means that Hypothesis 1, 2 and 3 are accepted. This result is consistent with the previous reviewing of the comparison of the meaning of both kinds of indicators as Cabaleiro *et al.* (2012), Kioko (2013), Navarro Galera (2017, 2020), Trussel and Patrick (2018) and Gorina *et al.* (2018) support in their analysis. ICMA indicators with a higher power of discrimination are those whose definition is in line with Spanish indicators, which supports the idea that the default or non-default concept of Spanish indicators is supported by the ICMA indicator system, i.e., the definition of financial condition by the Spanish legislation is consistent with the empirical evidence and with the financial condition standards at the international level. Both the Spanish legislation and the ICMA show common components in their own formulas, therefore, although ICMA and Spanish indicators do not have the same label, the study reveals that the informational content is similar and shares a common view about the representation of financial risk.

Table 16. Standardised Canonical Discriminant Function Coefficients.

	Model 1 Budgetary stability	Model 2 Expenditure rule	Model 3 Public debt	Model 4 Eco-financial plan
Indicator 1 Revenues per capita	−0.318	−0.080	−0.211	−0.413
Indicator 2 Restricted revenues		0.284		
Indicator 5 One-time revenues	−0.375	0.407		
Indicator 7 Uncollected property taxes	0.245	−0.035		
Indicator 9 Revenue shortfalls or surpluses	0.374	0.733	−0.371	
Indicator 10 Expenditures per capita	0.903	0.042		0.881
Indicator 13 Fixed cost	−0.261	0.103		
Indicator 15 Operating deficit or surplus	−0.170	−0.407		
Indicator 18 Liquidity		−0.001		
Indicator 19 Current liabilities	0.363	0.074	0.355	
Indicator 20 Long term debt	0.347	−0.143	0.837	
Indicator 21 Debt service	−0.217	−0.146		
Indicator 28 Population	−0.529	0.028	0.636	
Indicator 29 Population density	0.423	0427	0.134	
Indicator 30 Population under 18 and over 64		0.016	−0.815	−0.286
Indicator 31 Personal income per capita	0.494	0.154		
Indicator 36 Vacancy rates				
Indicator 37 Crime rate	−0.356	0.094		

The Standardised Canonical Discriminant Function Coefficients also provide the discriminant functions:

$$D_{BudStab} = -0.318RevCap - 0.375OneTRev + 0.245UncollPropTax + 0.374RevShortSurp + 0.903ExpCap - 0.261FixedCost - 0.170OpDefSurp + 0.363CurrLiab + 0.347LTDebt + 0.217DebtServ - 0.529Pop + 0.423PopDens + 0.494PersIncomCap - 0.356CrimeRate$$

$$D_{ExpRule} = -0.080RevCap + 0.284RestRev + 0.407OneTRev - 0.035UncollPropTax + 0.733RevShortSurp + 0.042ExpCap + 0.103FixedCost - 0.407OpDefSurp - 0.001Liq + 0.074CurrLiab - 0.143LTDebt - 0.146DebtServ + 0.028Pop + 0.427PopDens + 0.016Pop1864 + 0.154PersIncomCap + 0.094CrimeRate$$

$$D_{PubDebt} = -0.211RevCaptRev - 0.371RevShortSurp + 0.355CurrLiab + + 0.837LTDebt + 0.636Pop + 0.134PopDens - 0.815Pop1864$$

$$D_{EFP} = -0.413RevCap + 0.881ExpCap - 0.286Pop1864$$

After analysing all independent variables, we applied the stepwise procedure which shows the number of steps and the variables introduced in the regressions with the value of Wilk's Lambda in brackets (see Table 17). In this technique, the variables are incorporated one by one to the discriminant function in order to build a function using only the useful variables for the classification, also being possible to evaluate the

individual contribution of each variable to the discriminant model. In the case of *budgetary stability*, there are thirteen steps, in *expenditure rule* there are four steps, with seven steps in *public debt* and three in *eco-financial plan* model. The more steps the model has, the higher the number of significant variables are included. The conclusion of this table is the same as in the previous analysis with all independent variables (Table 16) because the variables with a higher discriminant power are the same.

Table 17. Stepwise Procedure of Discriminant Analysis.

Steps	Model 1 Budgetary stability	Model 2 Expenditure rule	Model 3 Public debt	Model 4 Eco-financial plan
1	Revenue shortfalls or surpluses	Revenue shortfalls or surpluses	Long term debt	Expenditures per capita
2	Revenue shortfalls or surpluses (0.972) Current liabilities (0.969)	Revenue shortfalls or surpluses (0.983) Population density (0.951)	Long term debt (0.890) Current liabilities (0.722)	Expenditures per capita (0.984) Revenues per capita (0.913)
3	Revenue shortfalls or surpluses (0.963) Current liabilities (0.954) One-time revenues (0.952)	Revenue shortfalls or surpluses (0.959) Population density (0.945) Operating deficit or surplus (0.931)	Long term debt (0.828) Current liabilities (0.712) Revenue shortfalls or surpluses (0.700)	Expenditures per capita (0.972) Revenues per capita (0.904) Population under 18 and over 64 (0.895)
4	Revenue shortfalls or surpluses (0.943) Current liabilities (0.940) One-time revenues (0.937) Population (0.936)	Revenue shortfalls or surpluses (0.941) Population density (0.940) Operating deficit or surplus (0.921) One-time revenues (0.920)	Long term debt (0.827) Current liabilities (0.702) Revenue shortfalls or surpluses (0.695) Population under 18 and over 64 (0.677)	
5	Revenue shortfalls or surpluses (0.932) Current liabilities (0.926) One- time revenues (0.930) Population (0.924) Personal income per capita (0.921)		Long term debt (0.815) Current liabilities (0.690) Revenue shortfalls or surpluses (0.686) Population under 18 and over 64 (0.675) Population (0.670)	
6	Revenue shortfalls or Surpluses (0.921) Current liabilities (0.922) One-time revenues (0.916) Population (0.911) Personal income per capita (0.920)		Long term debt (0.815) Current liabilities (0.677) Revenue shortfalls or surpluses (0.682) Population under 18 and over 64 (0.669) Population (0.663)	

	Crime rate (0.909)	Revenues per capita (0.661)
7	Revenue shortfalls or surpluses (0.910) Current liabilities (0.918) One-time revenues (0.913) Population (0.908) Personal income per capita (0.917) Crime rate (0.904) Operating deficit or surplus (0.897)	Long term debt (0.815) Current liabilities (0.674) Revenue shortfalls or surpluses (0.678) Population under 18 and over 64 (0.665) Population (0.659) Revenues per capita 0.659) Population density (0.654)
8	Revenue shortfalls or surpluses (0.903) Current liabilities (0.916) One-time revenues (0.903) Population (0.905) Personal income per capita (0.905) Crime rate (0.897) Operating deficit or surplus (0.894) Population density (0.892)	
9	Revenue shortfalls or surpluses (0.894) Current liabilities (0.903) One-time revenues (0.894) Population (0.901) Personal income per capita (0.903) Crime rate (0.893) Operating deficit or surplus (0.888) Population density (0.889) Uncollected property taxes (0.887)	
10	Revenue shortfalls or surpluses (0888) Current liabilities (0.895) One-time revenues (0.890) Population (0.897) Personal income per capita (0.896) Crime rate (0.886)	

	Operating deficit or surplus (0.883) Population density (0.887) Uncollected property taxes (0.883) Revenues per capita (0.882)
11	Revenue shortfalls or surpluses (0.883) Current liabilities (0.892) One-time revenues (0.885) Population (0.896) Personal income per capita (0.888) Crime rate (0.879) Operating deficit or surplus (0.877) Population density (0.884) Uncollected property Taxes (0.878) Revenues per capita (0.878) Fixed cost (0.877)
12	Revenue shortfalls or surpluses (0.880) Current liabilities (0.877) One-time revenues (0.880) Population (0.894) Personal income per capita (0.885) Crime rate (0.875) Operating deficit or surplus (0.871) Population density (0.881) Uncollected property taxes (0.873) Revenues per capita (0.875) Fixed cost (0.874) Long term debt (0.872)
13	Revenue shortfalls or surpluses (0.875) Current liabilities (0.873) One-time revenues (0.876) Population (0.891) Personal income per

capita (0.879)
Crime rate (0.871)
Operating deficit or surplus (0.865)
Population density (0.878)
Uncollected property taxes (0.868)
Revenues per capita (0.872)
Fixed cost (0.869)
Long term debt (0.871)
Debt service (0.867)

As the previous assumptions of discriminant analysis are not flexible to analyse the adequacy of the model and considering that is insufficient to study the behavior of dependent and independent variables, we complement the analysis with the application of logistic regression models with panel data whose main results are in Table 18.

Table 18. Logistic Regressions.

	Model 1 **Budgetary stability**	**Model 2** **Expenditure rule**	**Model 3** **Public debt**	**Model 4** **Eco-financial plan**
LR of rho	0.49	1	0.00	0.00
Classification matrix	75.91	63.21	92.49	91.95

We focused this part of the analysis in a set of magnitudes of different tests that are usually applied in logistic regression models. The likelihood-ratio test of rho = 0 (LR of rho), which explains the independence of equations is statistically significant in Model 3 and Model 4, so the null hypothesis is rejected, which means that estimated panel data explain an important proportion of the total variance. The matrix classification represents the correct classification, providing us with the percentage of the level of success: *Model 1:* 75.91%, *Model 2:* 63.21%, *Model 3:* 92.49% and *Model 4:* 91.95%, which reaffirms the goodness of fit of models, particularly in Models 3 and 4, and the higher discriminant power of independent variables.

We also applied a stepwise logistic regression method (forward LR) to compare results between discriminant analysis and logistic regression, obtaining the independent

variables with a higher discriminant power (Table 19). In this way, we check if the application of a different methodology shows similar conclusions, identifying the significant independent variables in the models and helping to study if Spanish indicators respond to the default classification according to ICMA indicators.

Table 19. Variables in the equation in logistic regression. Forward LR Method.

		Model 1						Model 2				
	Steps	**Budgetary stability**						**Expenditure rule**				
	Indicators	**B**	**S.E.**	**Wald**	**Sig.**	**Exp (B)**	**Indicators**	**B**	**S.E.**	**Wald**	**Sig.**	**Exp (B)**
1	Current liabilities	0.00	0.00	27.45	0.00	1.00	One- time revenues	0.00	0.00	38.63	0.00	1.00
	Constant	−1.55	0.10	224.42	0.00	0.21	Constant	−0.32	0.07	19.18	0.00	0.72
2	Expenditure per capita	0.00	0.00	16.39	0.00	1.00	One- time Revenues	0.00	0.00	26.51	0.00	1.00
	Current liabilities	0.00	0.00	31.28	0.00	1.00	Revenue shortfalls	0.00	0.00	18.72	0.00	1.00
	Constant	−1.54	0.10	210.50	0.00	0.21	Constant	−1.86	0.36	26.28	0.00	0.15
3	Expenditure per capita	0.00	0.00	22.12	0.00	1.00	One- time Revenues	0.00	0.00	32.01	0.00	1.00
	Operating Deficit or surplus	0.00	0.00	11.17	0.00	1.00	Revenue shortfalls	0.00	0.00	21.67	0.00	1.00
	Current liabilities	0.00	0.00	33.69	0.00	1.00	Expenditures per capita	0.00	0.00	9.31	0.00	1.00
	Constant	−1.16	0.15	57.98	0.00	0.31	Constant	−2.00	0.37	28.92	0.00	0.13
4	Expenditure per capita	0.00	0.00	23.50	0.00	1.00	One- time revenues	0.00	0.00	31.71	0.00	1.00
	Operating deficit	0.00	0.00	10.59	0.00	1.00	Revenue shortfalls	0.00	0.00	18.72	0.00	1.00
	Current liabilities	0.00	0.00	34.32	0.00	1.00	Expenditures per capita	0.00	0.00	11.77	0.00	1.00
	Debt service	0.00	0.00	4.989	0.02	1.00	Operating deficit	0.00	0.00	5.50	0.01	1.00
	Constant	−0.86	0.20	18.45	0.00	0.42	Constant	−1.62	0.40	16.31	0.00	0.19
5	Revenues per capita	0.00	0.00	4.46	0.03	1.00						
	Expenditure per capita	0.00	0.00	25.02	0.00	1.00						
	Operating deficit	0.00	0.00	9.04	0.00	1.00						
	Current liabilities	0.000	0.000	30.30	0.00	1.000						
	Debt service	0.00	0.00	5.00	0.02	1.00						

					5	0
	Constant	−0.12	0.40	0.09	0.72	0.88
6	Revenues per capita	0.00	0.00	7.25	0.00	1.00
	Expenditure per capita	0.00	0.00	27.57	0.00	1.00
	Operating deficit or surplus	0.00	0.00	6.63	0.01	1.00
	Current liabilities	0.00	0.00	24.73	0.00	1.00
	Long term debt	0.00	0.00	5.93	0.01	1.00
	Debt service	0.00	0.00	8.19	0.00	1.00
	Constant	0.00	0.40	0.00	0.99	1.00

Steps	**Model 3**					**Model 4**					
	Public debt					**Eco-financial plan**					
	Indicators	**B**	**S.E.**	**Wald**	**Sig.**	**Exp (B)**	**Indicators**	**B**	**S.E.**	**Wald**	**Sig.**	**Exp (B)**
1	Long term debt	0.00	0.00	117.54	0.00	1.00	Expenditures per capita	0.00	0.00	26.88	0.00	1.00
	Constant	−3.29	0.19	289.89	0.00	0.03	Constant	−3.55	0.37	92.25	0.00	0.03
2	Revenues per capita	0.00	0.00	49.29	0.00	1.00	Expenditures per capita	0.00	0.00	27.81	0.00	1.00
	Long term debt	0.00	0.00	173.07	0.13	1.00	Population under 18 and over 64	0.00	0.00	5.25	0.02	1.00
	Constant	−0.78	0.52	2.28	0.00	0.45	Constant	−3.65	0.36	104.63	0.00	0.03
3	Revenues per capita	0.00	0.00	34.94	0.00	1.00	Expenditures per capita	0.00	0.00	26.21	0.00	1.00
	Current liabilities	0.00	0.00	20.09	0.00	1.00	Fixed cost	0.00	0.00	5.87	0.02	1.00
	Long term debt	0.00	0.00	161.21	0.00	1.00	Population under 18 and over 64	0.00	0.00	7.32	0.01	1.00
	Constant	−1.75	0.57	9.38	0.00	0.17	Constant	−5.69	0.96	34.77	0.00	0.00
4	Revenues per capita	0.00	0.00	35.89	0.00	1.00						
	Current liabilities	0.00	0.00	14.81	0.00	1.00						
	Long term debt	0.00	0.00	156.82	0.00	1.00						
	Crime rate	0.00	0.00	9.94	0.00	1.00						
	Constant											

In *Model 1 Budgetary stability*, the *Indicator 19 Current liabilities* is included in the first step, while in the discriminant analysis, it is included in the second step. *Indicator 10 Expenditures per capita* is included in the second step, while in the

discriminant analysis, it is not included in any. *Indicator 1 Revenues per capita* is included in the fifth step, while in the discriminant, it is in step number ten. *Model 2 Expenditure rule* shares the same number of steps in logistic regression and discriminant analysis, coinciding also with a higher discriminant power the same independent variables: *Indicator 5 One-time revenues*, I*ndicator 9 Revenue shortfalls or surpluses* and *Indicator 15 Operating deficit or surplus*. In *Model 3 Public debt,* logistic regression shows four steps, while in the discriminant analysis, there are seven, including the *Indicator 20 Long term debt*, the independent variable with a higher discriminant power included in the first step in both analyses. Finally, in *Model 4 Eco-financial plan,* three steps in both analyses are observed, showing *Indicator 10 Expenditures per capita* and *Indicator 30 Population under 18 and over 64* as independent variables with more discriminant power.

The independent variables that discriminate better are *Indicator 1 Revenues per Capita*, *Indicator 10 Expenditures per capita*, *Indicator 9 Revenue shortfalls or surpluses*, *Indicator 19 Current liabilities* and *Indicator 20 Long term debt*, in other words, we obtain the same conclusion of discriminant analysis: the independent variables with a higher discriminant power are those indicators that have a similar meaning to Spanish indicators. The similarity of results provides robustness to our study.

Both analyses conclude that the indicators that better explain the default of Spanish LGs are those related to expenditures, revenues and debt. Furthermore, in logistic regression, the percentage of success is very high for the models of *Public debt* and *Eco-financial plan*, which means that the classification about default and non-default is correct in almost 90% of cases. ICMA indicators that measure the revenues, expenditures and debt classify correctly almost all Spanish LGs in default according to the Spanish legislation, based on transposing Eurostat requirements. That is, there is a direct relationship about the concept of default in Spanish legislation and the ICMA model/system.

2.7. Discussion

The main objective of this article was to analyse whether the way to measure the financial condition of LGs in Spain is a fair representation and a reliable tool for the measurement of the LG financial condition under international standards. After the reform of the Spanish Constitution in 2011 as a consequence of the Stability and Growth Pact (SGP) requirements of the EU, the financial control of LGs has increased by fixing debt and deficit limits. In absence of general patterns of the definition of financial indicators for LG financial sustainability, our research is focused on verifying if Spanish LGs' financial indicators show common factors of the definitions of financial sustainability which are universally accepted. For this reason, we analyse the previous literature about different ways of measuring financial sustainability (such as ICMA, FIR, or AAS 27 indicators), that are also used by authors who try to explain the best way to derive useful information and evaluate the financial condition, obtaining common factors which are evaluated in order to achieve a good tool which allows us to test the financial sustainability of LGs. From this study, we conclude that four common factors are evaluated in financial sustainability, which reveals the application of four hypotheses in the analysis: evaluation of revenues, evaluation of expenditures, evaluation of debt and evaluation of cash. The methodology applied aims at providing a model to test if financial ratios adopted by countries to control financial sustainability are backed by the generally accepted benchmarking international standards. In particular, we apply ICMA financial indicators because they represent a consistent tool of benchmarking, defining them as independent variables in the models, whose dependent variables are the indicators that we want to test the reliability of (each one the Spanish LGs financial indicators). Our results are consistent with previous literature because the indicators are associated with the control of expenditures and debt, and the revenue development is the variables that better explain the financial sustainability of LGs that may also support evaluations of the credibility of financial indicators.

Access to public information is crucial to develop a robust study; unfortunately, there are still obstacles in order to obtain all the information that a researcher would like to obtain, and it has become extremely complex to gather the information of worldwide LGs. Because of this, the progress in transparency of LG information must be a tool in

order to be enhanced by governments which would allow for the identification of synergies among different ways to measure financial sustainability in the search for the most reliable financial indicators. It would be desirable not only to know the financial sustainability or instability of a local entity, but also to know that financial indicators would give enough information about the degree of instability of the LG.

2.8. Conclusions

LGs in Spain have the autonomy to manage the delivery of public services under their responsibility, collecting their own taxes, borrowing from banks and markets, and receiving transferences and grants from the central government, regional governments, and/or supranational organizations.

The EU has established a set of financial requirements to be met by the Eurozone countries in order to ensure the sustainability of public sector finances. Those requirements are monitored by Eurostat, which controls the financial position of Eurozone countries. Some Eurozone countries have transposed the binding EU regulation to their own domestic framework. In the Spanish case, the freedom of LGs to borrow from banks and markets and the introduction of new taxes have led the central government to transpose the EU regulations at its domestic local level, in order to ensure that LGs stay within the EU financial requirements related to the sustainability of public services delivered. Notwithstanding, we wonder to what extent these EU financial requirements and the indicators designed in Spain to transpose EU financial requirements are able to faithfully represent the actual financial condition of local.

The aim of this study is to determine whether financial indicators about financial conditions defined in Spanish regulation are backed by worldwide generally accepted financial benchmarking indicators. For this purpose, we analyse the relationship between Spanish indicators of financial sustainability based on EU regulations and Financial Trends Monitoring System Indicators of the ICMA. In this study, two methodologies are applied: discriminant analysis and logistic regression, where the dependent variables are each of the Spanish financial indicators and the independent variables are ICMA indicators.

The similar results of both analyses allow us to conclude that the ICMA variables,

which endorse Spanish financial requirements, are those related to the financial indicators categories of: revenues, expenditures, operating position indicators and debt indicators, which is consistent with previous literature. The unfunded liability indicator category is not applicable to the Spanish case because pension plans and other retirement liabilities are centralised at the central government level for the whole Spanish public administration. Capital Plant indicators are also not applicable because Spanish LG are sovereign entities with democratic elections of the council of the city and the Mayor and, therefore, they do not contain contributed capital from parent entities.

Within each category, the ICMA defines a set of indicators and ratios. In the Spanish LG case, the indicators that better capture and summarize the substance of the transposition of the EU financial requirements to the Spanish LG legislation are *Revenues per capita* and *Revenues shortfalls or surpluses*, *Expenditure per capita*, *Operating deficit or surplus*, *Current liabilitie*s and *Long term debt*.

The measurement of financial condition is related to revenues (*budgetary stability*), expenditures (*expenditure rule*) and debt (*public debt*), which is aligned with the ICMA system and previous literature.

At present, efforts of municipal managers must be focused on ensuring financial sustainability; otherwise, the liquidity and the solvency of LG would be affected. To avoid a situation where LGs are not able to meet their future financial obligations, robust quality tools of financial indicators are necessary not only to give information to policymakers, but also to be able to predict instability situations and provide a classification of the financial performance of local administrations. Therefore, the consistency of Spanish transposition of Eurozone requirements with international standards is positive evidence that gives reliability to all economic players and provides additional tools to managers for benchmarking purposes. Each country might adopt financial thresholds in accordance with its own administrative and legal framework, but the different forms of transposing Eurozone financial sustainability requirements should represent the same generally accepted concepts of financial sustainability, solvency and liquidity. The congruence between Spanish financial indicators and worldwide generally accepted financial benchmarking indicators enable us to provide an interesting contribution: these conclusions allow others countries to test the reliability of their own

domestic regulation, providing a model that allows them to test their own domestic measurement of financial condition against worldwide generally accepted benchmarking standards. Moreover, the ICMA indicator system may become a benchmark reference to compare the financial sustainability of LGs at the EU- and international level which entails a reference framework for the financial controllers in LGs. As a result, this article provides two contributions to the financial sustainability arena: on one hand, Spanish financial indicators are in line with worldwide accepted benchmarking, and on the other hand, we suggest a model to test the reliability of financial sustainability indicators of LGs.

The control process of financial condition in LG and the demands for transparency after the global financial 2008 and Covid-19 crises is defining a new paradigm in LG management, which is powering ahead in Spain with the launch of regulation based on EU standards that establishes a schedule of reports concerning the financial situation of LGs. This achieves more responsible management in local administration, providing public services with quality.

SECTION 2: NON-FINANCIAL SUSTAINABILITY

CHAPTER 3: NON- FINANCIAL AND SUSTAINABILITY REPORTING IN SPANISH MUNICIPALLY OWNED

Chapter under review.

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Abstract

Public administrations have been adopting financial and non-financial reporting systems based on techniques and criteria previously implemented in private sector companies. Law 11/2018 on non-financial reporting and diversity introduced mandatory non-financial reporting requirements for large companies and the trend is towards the introduction of this type of information in the reporting systems of more and more companies. This legal framework is also applicable to Spanish state, regional and municipally owned corporations. The objectives of this study are: 1) to analyse the Non-Financial Report (NFR) in Spanish municipally owned corporations by identifying those organizations that are pioneers in this field, and 2) to gather the opinions of experts who have carried out the first NFR in these corporations regarding the objectives of this reporting, its comparability and its level of difficulty and utility. In order to do this, the *Integrated Reporting Model for Environmental, Social* and *Corporate Governance* (IRM-FESG) prepared by the Spanish Association of Accounting and Business Administration (AECA), generally accepted in Spain, has been taken as a point of reference and the Delphi method has been used. The main conclusions are that MOCs prepare the NFR but they do not evaluate the indicators and so they are not applied to carry out a good corporate strategy. In addition, the NFR indicators are required for all companies, without considering the services they provide. Finally, their comparability is a pending issue nowadays.

3.1. Introduction

Public administrations have been adopting financial and non-financial reporting systems based on techniques and criteria previously implemented in private sector companies. Law 11/2018 on non-financial reporting and diversity introduced mandatory non-financial reporting requirements for large companies and the trend is towards the introduction of this type of information in the reporting systems of more and more companies. This legal framework is also applicable to Spanish state, regional and municipally owned corporations (MOCs).

To ensure the financial sustainability of Local Governments (LGs), Spain embraced legal changes with the adoption of the *Organic Law on Budgetary Stability and Financial Sustainability*, enacted in 2012 and establishing *reporting requirements* which provide a schedule for evaluating the financial positions of LGs and for monitoring their financial health.

With respect to non-financial sustainability, the *Integrated Report* (<IR>) by the International Integrated Reporting Council (IIRC) emerged in 2013 as an initiative which aims to be a universally accepted standard for non-financial reporting, being a theoretical framework. The latest release of the <IR>, in 2021, tries to promote a more cohesive approach to corporate reporting. In Europe, *Directive 2014/95/EU of the European Parliament*, called the *Non-Financial Reporting Directive*, reinforces non-financial sustainability by promoting the inclusion of non-financial statements in the annual reports of corporations. This Directive has been transposed into the Spanish system through *Law 11/2018 on Non-Financial Information and Diversity*, which is applicable to big companies (including big MOCs). This law entered into force on 1 January 2018 and required the publication of this kind of information for that year. The adoption of this law opens a new paradigm for MOCs, because it implies the provision of new information and indicators, which complements the above mentioned law about financial sustainability in LGs. In line with this law, the *Spanish Association of Accounting and Business Administration* (AECA) has developed the *Integrated Reporting Model* (IRM) for companies, generally accepted in Spain and even referenced in the Law, which includes financial information along with non-financial information about *Environmental*, *Social* and *Corporate Governance* matters (FESG). The main

added value of the IRM-FESG model is the definition of detailed Key Performance Indicators (KPIs) about non-financial concepts.

The objectives of this study are to analyse the Non-Financial Report (NFR) in Spanish municipally owned corporations, identifying those entities which are the pioneers in this field, and to gather the opinions of a panel of experts who have headed the first NFR at these corporations about the objectives of this reporting, its comparability and its level of difficulty and utility. To find out the content of the Non-Financial Reports by corporations that have disclosed this information, we examined their websites at Spanish Local Government with populations higher than 50,000 inhabitants, from 2018 and 2019. Furthermore, a Delphi study was carried out in order to gather the opinions of a panel of experts from the municipally owned corporations who have headed this initiative. The opinions of the experts who headed these reports add an innovative approach to NFR to the literature, especially regarding municipally owned corporations. This study highlights lessons to be learnt by all local organizations, which would probably be obliged to include this reporting into the integrated reporting in the near future.

The article is organised as follows: firstly, sustainability reporting and municipally owned corporations and the Spanish context regarding municipally owned corporations are introduced. Secondly, the methodology is explained. Thirdly, an analysis of the results is described. And finally there is a discussion followed by the conclusions drawn.

3.2. Sustainability reporting and Municipally Owned Corporations (MOCs)

The United Nations Paris Agreement of 2015 and the 2030 Agenda for Sustainable Development Goals (SGD, 2015) establish recommendations to enhance transparency in government sustainability. In particular, SDG number 11 refers to *"Sustainable cities and communities"*, which reinforces the importance of sustainability in LGs. The European Green Deal also tries to improve the well-being and health of citizens by making Europe climate-neutral by 2050, with the European system needing to become more sustainable to achieve these goals. *Directive 2014/95/EU of the European*

Parliament, the Non-Financial Reporting directive (NFRD), provides a proper European legislative framework that is transposed to each State member. At present, the Commission is developing a proposal for a Corporate Sustainability Reporting Directive from April 2021, amending the existing reporting requirements of the NFRD. The proposal suggests a reporting requirement according to mandatory EU sustainability reporting standards and more comprehensive reporting requirements.

The adoption of Directive 2014/95/EU of the European Parliament has prompted extensive studies on NFR by some authors. Biondi *et al.* (2018) support the fact that NFR makes data meaningful and understandable by supplementing financial information and Tylec (2020) argues that the use of NFR increase the effectiveness of management. However, some authors believe it is necessary to reinforce efforts in the development of NFRs because it is not sufficiently comparable and because corporations do not report all non-financial information that users think is essential (La Torre, 2020). Monfardini (2014) states that the absence of benchmarking involves a "freedom" which permits to appreciate singular peculiarities concerning social reporting contributing to the location of the best practices, although it does not permit to assure reliability to the information provide. Previously, some authors also pointed to limited research on this topic, being identified as a consequence of a scarcity of companies that engage in formal sustainability reporting (Larrinaga and Chamorro, 2008). Lack of compliance can be attributed to companies disregarding social and environmental standards and disclosure requirements without specific consequences (Adams *et al.*, 1995, Larrinaga *et al*., 2002, Bebbington *et al.*, 2008). With respect to the public sector, authors like Ball and Bebbington (2008) asserted that public sector organisations may be in a position to report meaningful accounts of sustainable development performance. This idea involves an evolution of the concept of sustainability reporting in the public sector (Stefanescu, 2021), focused on environmental and social aspects, although the financial area remains to the fore (Greiling *et al.*, 2015).

Some approaches related to corporate social and environmental reporting practices regarding public sector organisations, such as non-financial information, are legitimacy theory, stakeholder theory and institutional theory. The concept of legitimacy is explained by Suchman (1995) as 'a generalised perception or assumption that the

actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions'. Legitimacy theory investigates the reaction of the company to what society expects of it (Deegan, 2000): a socially and environmentally responsible attitude through a 'social contract' between the company and society (Shocker and Sethi, 1974) based on the delivery of some socially desirable ends to society. In the case of the public sector, this theory supports the idea that the larger public entities with an explicit environmental mission would be expected to disclose more environmental information to legitimise their behaviour and practices to the public (Lodhia *et al.* 2012). For local governments, searching for transparency in sustainability implies reinforcing the reporting in order to demonstrate the legitimacy of their activities. This idea becomes important in MOCs because their goal is to provide public services. According to Alcaraz-Quiles *et al.* (2019), the publication of sustainability information under the right to information laws could facilitate the accountability of public bodies.

The stakeholder theory supports the fact that disclosure and stakeholders are related. Environmental information would be considered as being material to account users (Deegan and Rankin, 1996). The theory supports the fact that social and environmental reporting generates many interesting questions about what motivates managers to disclose information (Deegan, 2002, 2019). In some cases, this means that companies include a proactive and transparent strategy on NFRs when stakeholders demand more information about their social performance (Rodrigue *et al.*, 2013). MOCs are created to provide local public services, whose final customers are the public and suppliers; the opinions of the public and suppliers (as stakeholders) are therefore very important for these corporations. The public demands quality public services, as their taxes are used to finance these services. Suppliers need to know if the corporation is solvent to trust them. The exploration of stakeholder engagement in the public sector, as well as its role in sustainability accounting, accountability and reporting is essential in integrated reporting (Kaur and Lodhia, 2019). Moreover, disclosure is considered a powerful legitimising tool (Monfardini *et al*., 2012), because disclosure recalls the idea of accountability, which is universally considered being good.

Institutional theory contemplates organisational fields as contexts that impose requirements and/or constraints on corporations (Scott, 2008). This theory appreciates how organisations tend to take on similar forms which are identified as an isomorphic

process promoting their stability and success (Meyer and Rowan, 1977; Deegan, 2019)). The coercive isomorphism described by DiMaggio and Powell (1983) could be applicable to the legislation on NFRs, which establishes the requirements that organizations are obliged to fulfil. This also implies a formal pressure for MOCs. This approach states that the behaviour and structure of an organisation is affected by the existence of a common legal environment, being obliged to conform to the dictates of their institutional environments (DiMaggio and Powell, 1983 and Powell, 1988).

3.3. Spanish municipally owned corporations: hybrid entities

There are two governing principles applicable to local governments that are defined in the Spanish Constitution: autonomy (art. 137) and financial sufficiency (art. 142). Local governments have the responsibility and autonomy to manage the provision of local public services in order to guarantee a minimum level of services according to the size of the population. Law 7/1985 determines the management types (see Table 20), which can be performed directly or indirectly. Autonomous bodies are ruled by public law and in budgetary and accounting matters they use the same system as the main local entity, which they depend on. Business-like entities operate under commercial law requirements and adopt business-like governing bodies and management. Consortiums are associations among LGs and other Public Administrations with a common public interest. Foundations, in some autonomous communities such as Aragón, La Rioja, Islas Baleares or Andalucía are figures used to manage local public services (Arcas *et al*., 2018).

Table 20. Structure of Local Governments in Spain

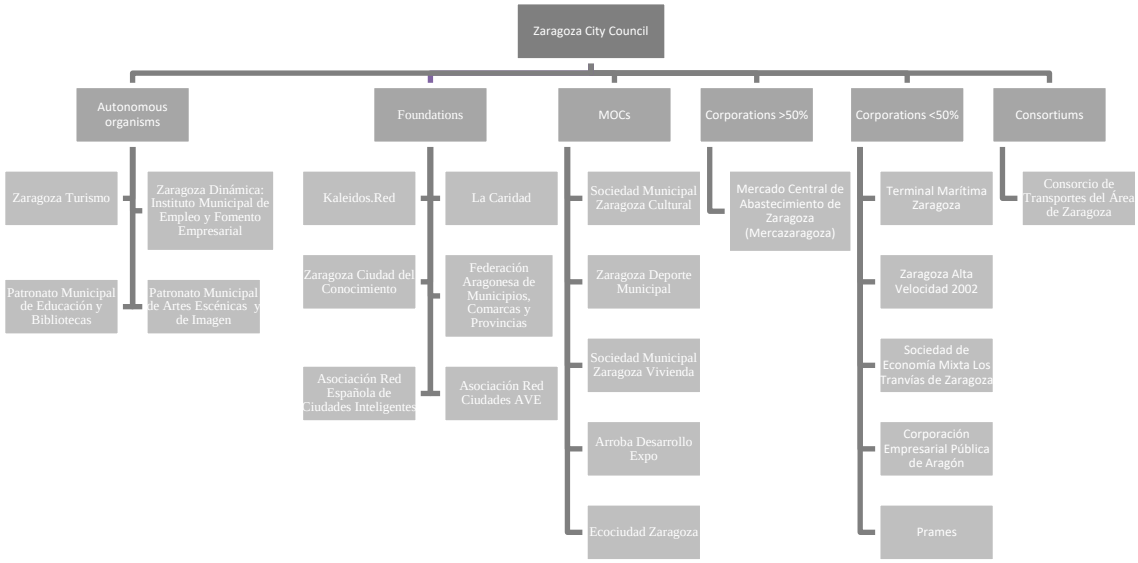
		Law	Accounting	Accounting Plan	Budgetary	Efficiency	Procurement	Commercial Law	Audits	Observations
Local Publicly Dependent Bodies which may be created by a LG	Autonomous bodies	Public	Public	Public	Public. Limited budget	Public	Public	No	No	Performing administrative activities
	Business- like entities	Private	Private	Private	Private. No limitative budget.			Yes		Providing public services or production of goods on a paid basis. Management power is public.
	Municipally owned corporations (MOCs)	Private	Public	Private	Public	Public	Public	Yes	Yes	Share capital is 100% publicly owned
Entities in which a LG may participate	Corporations >50% of capital	Private	Private	Private	Private			Yes	Yes	They are joint ventures
	Corporations < 50% of capital	Private	Private	Private	Private			Yes	Yes	They are corporations with minority shareholdings
	Foundations	Private or public	Private or Public	Private or Public	Private or Public		Private or Public	Applicable if performing economic activities		The regulation of Foundations depends on each autonomous community
	Consortiums	Public	Public	Public	Public	Public	Public		Yes	
	Non- Profit Institutions (NPIs)								Yes	Applicable Law 49/2002
	User Communities	Public	Public	Public	Public	Public	Public			

Source: Compiled by authors, based on Basic Law on Local Government in Spain

Municipally owned corporations are hybrid entities that work as private-sector corporations and whose share capital is 51-100% publicly owned. This capital is subscribed by the main organization when the company is formed. MOCs' budgets, their annual action programmes, investments and financing of the company are included in the general budget as an appendix of the main organization. With respect to accounting matters, these companies are governed by private sector accounting and fall within the scope of commercial law and other mercantile legislation. Private regulation is applicable in MOCs, except in accounting and financial control, and procurement areas. These companies are therefore under private and public laws.

Graph 4 shows the structure of Zaragoza city council, a medium-sized city taken as being representative of the average Spanish level in several scores, and an illustrative example of the importance of MOCs in local governments in Spain.

Graph 4. Structure of the Local Government of Zaragoza



At present, MOCs are the only local government entities subject to NFR obligations according to the requirements included in *Law 11/2018*. Considering municipally owned corporations to be hybrid entities, creates an enabling environment for the introduction of this report. It allows us to establish a good prelude before applying the Non-Financial Reporting legislation to the whole of Local Administration.

Spanish Framework Law 11/2018

The regulatory framework for Non-Financial Reporting in Spain involves the transposition of Directive 2014/95/EU on non-financial and diversity information, and which has forced the legal system to make some changes to the *Spanish Commercial Code* and the *Consolidated Text of the Law on Corporations,* by means of *Law 11/2018*. The main objective of this law is to identify risk in order to improve sustainability and enhance investor, consumer and society's confidence by increasing non-financial information reporting, as social and environmental aspects are related to the corporate social responsibility. The main innovation of this law is the establishment of NFR,

which would be prepared on a mandatory basis by corporations that meet certain size requirements. The necessary requirements making it necessary to disclose information involve the number of employees (more than 500, and since 1 January 2021, more than 250); being considered public interest entities in accordance with the legislation on the auditing of accounts; or meeting at least two of the following conditions for two consecutive years at both year-end dates:

1. The total of the consolidated asset items is greater than 20 million euros.
2. The net amount of the consolidated annual turnover exceeds 40 million euros.
3. The average number of workers employed during the year is greater than 250.

This report would be included as appropriate as part of *report management* along with the Consolidated Financial Statements, containing information about environmental, social and staff aspects, respect for human rights, fighting against corruption and bribery, the information society. NFR may also include a description of the business model, a definition of the diligence procedure used to identify and evaluate risk and significant impacts and non-financial key performance indicators that allow monitoring and facilitate comparability across corporations and sectors.

AECA's framework

The Spanish Association of Accounting and Business Administration (AECA) have standardised criteria in order to obtain practical indicators about environmental, social and corporate governance concepts. AECA is the point of reference concerning good practices in business management, being the only professional institution which issues generally accepted accounting standards. In the non-financial information arena, AECA has been implementing different tools for many years in order to help corporations to report this kind of information. Due to the NFR requirement caused by the adoption of Law 11/2018, AECA developed an integrated information model for disclosure of this statement, the *Integrated Reporting Model*, which includes financial information along with non-financial information about e*nvironmental*, *social* and *corporate governance* matters (FESG), and giving rise to the IRM-FESG, which establishes the Key Performance Indicators (KPIs). Neither the Law nor the EU Directive provide detailed indicators to be calculated and included in the NFR. However, AECA suggests a range

of indicators to facilitate NFR. The AECA proposal is a guideline which allows corporations to prepare the non-financial information to be reported. The consequence is that the *IRM- FESG* is cited in *Law 11/2018* as *'Cuadro Integrado de Indicadores CII-FESG'* and as a point of reference. For each indicator, this model describes the indicator code, its name and definition, some considerations and the equivalence with other accepted frameworks. The information included in Appendix 1 gathers together a summary of AECA indicators defined in their model, and there is some guidance on this model on the AECA website at https://is@aeca.es/. The model has been reinforced by different joint working groups in key frameworks such as the Global Reporting Initiative (GRI), Carbon Disclosure Project (CDP), International Integrated Reporting Council (IIRC), Task Force on Climate-related Financial Disclosures (TCFD) and International Financial Reporting Standards (IFRS). The acknowledgement of this model is increasing as a result of it achieving great relevance on being endorsed by accepted frameworks and important bodies. In addition, this model has been accepted by the Spanish National Securities *Market* Commission (CNMV) for disclosure and has also been acknowledged by the Spanish Accounting and Audit Institute (ICAC), which has also strengthened the importance of this tool. The launching of this initiative through the IRM-FESG model shows a great engagement by AECA regarding non-financial information supporting corporations (included MOCs) in the preparation of the NFR statement. The IRM- FESG model entails the possibility of preparing the NFR statement with high quality under an accepted and acknowledged framework.

3.4. Methodology

Sample

Unlike local administration financial information, NFR disclosures are not currently submitted on a single website. The Spanish Ministry of Finance's website "*Virtual office for financial coordination of local entities*" is responsible for gathering financial information using the XML taxonomy. This information is publicly available, which facilitates the analysis of financial data. However, obtaining samples of non-financial information from municipally owned corporations (MOCs) has been an extensive task, researching corporation by corporation. If NFR were part of the General Accounts that

local governments report annually to the Court of Auditors, it could be included on their website. Maybe in a near future.

All this involves carrying out meticulous work in searching for data. First of all, the 'Inventory of Local Governments' website, was examined selecting those with more than 50,000 inhabitants. We found 331 MOCs. Then, we identified which of these companies are subject to NFR obligations and meet the legal requirements, the number being 25. Legal requirement data regarding the consolidated asset and the net amount of the consolidated annual turnover have been collected on the Court of Auditors' website https://www.rendiciondecuentas.es/es/consultadeentidadesycuentas/buscarCuentas/, while the number of workers has been obtained from each corporation's website. Then we found the companies that have included a section on non-financial information in their reporting disclosure. To do this we carried out a detailed study by examining the transparency section of local government and the reports by each MOC, in 2018 and 2019. There are companies that are within the subjective scope of *Law 11/2018* and do not submit this report. This might be because there is no a specific infringement procedure in the case of not reporting, except those included in Spanish Companies Law and those related to the deposit of the annual accounts. We identified NFR in 12of those 25 MOCs, which are 100% owned by municipalities (see Table 21) and included in the same section as the *Management Report*.

All indicators about *Environmental*, *Social* and *Fighting against corruption and bribery* matters are included in every NF statement analysed. The AECA's IRM-FESG model also includes indicators about financial and corporate governance matters, but *Law 11/2018* does not describe these specific indicators as part of NFR. As *financial information* is mandatory for all corporations and submitted annually, it might be considered that the level of reporting for *Financial indicators* is 100%. C*orporate Governance indicators* have been included in the Annual Report on Corporate Sustainability Reporting and so, for our purposes, although they are not included in the MOC's NFR, since they are considered as reported.

Table 21. Spanish municipally owned companies (MOC) which report non-financial information

Local Government	Company	id	Year	Indicators Frame	Service provided
Madrid	Empresa Municipal de Transportes de Madrid, S.A. (EMT)	Madrid EMT	2018	Law 11/2018	Tranports
Madrid	Madrid Destino Cultura, Turismo y Negocio, S.A.	Madrid Destino	2018, 2019	GRI standards	Culture
Barcelona	Barcelona Activa SAU (SPM)	Barcelona Activa	2018, 2019	GRI standards	Employment
Barcelona	Barcelona de Servicios Municipales, SA (BSM)	Barcelona BSM	2018	GRI standards	Culture
Valencia	Empresa municipal de Transports Urbans (EMT)	Valencia EMT	2019	GRI standards	Tranports
Sevilla	Empresa Limpieza Pública del Ayuntamiento de Sevilla S.A.M. (LIPASAM)	Sevilla LIPASAM	2018, 2019	GRI standards	Urban cleaning
Sevilla	Transportes Urbanos de Sevilla, SAM (TUSSAM)	Sevilla TUSSAM	2018, 2019	GRI standards	Tranports
Palma	Empresa municipal d'Aigües i Clavegueram, S.A. (EMAYA)	Palma EMAYA	2018, 2019	GRI standards	Water supply
Palma	Empresa municipal de Transports Urbans (EMT)	Palma EMT	2018	GRI standards	Transports
Las Palmas de Gran Canaria	Guaguas Municipales S.A.	Palmas Guaguas	2018, 2019	GRI standards	Transports
Córdoba	Saneamientos de Córdoba, S.A. (SADECO)	Córdoba SADECO	2018	GRI standards	Waste collecting and treatment
Rivas-Vacíamadrid	Rivas-Vaciamadrid Empresa Municipal Servicios, S.A. (Rivamadrid)	Rivamadrid	2019	GRI standards	Municipally services

The structure of the NFR in each MOC is not the same, because there is no common nomenclature. This is why the indicators disclosed by the twelve corporations

under the *Law 11/2018* requirements have been analysed by looking for their counterpart in the framework of the AECA *Integrated Reported Model*-IRM-FESG in order to assist understanding. AECA's IRM-FESG scoreboard defines 59 Key Performance Indicators (KPIs) to show the equivalence between different frameworks, something which has facilitated the analysis. For each corporation, we reviewed their last public reports, identifying the number of indicators calculated according to IRM-FESG.

The Delphi method

The Delphi method has been used with the aim of analysing the opinion of the experts who carried out the first NFRs at Spanish MOCs. The Delphi method allows us to study and analyse the experience of NFR pioneers at local corporations regarding the comparability of the KPIs, the level of difficulty in gathering this information and the utility of this report. This method is used when it is not possible to use statistical methods because there is not enough information. It is characterised by the selection of a panel of experts that show their appreciation of the research questions through surveys, providing anonymous feedback. Experts are capable of extrapolating their knowledge which has been acquired through their own professional experience.

The judgement on the subject from knowledgeable people with a great experience (experts) should be structured and channelled together with available information (Landeta, 1999). The aim of the Delphi method is to arrive at an agreement amongst experts within a particular field of research, especially where little is known about the topic (Hennessy and Hicks, 2003). According to the definition by Helmer (1967), the Delphi method is a multiple iteration survey technique that enables anonymous, systematic refinement of expert opinion with the aim of arriving at a combined or consensual position. The main characteristics of this method are as follows (Landeta, 2005): it is a repetitive process, the anonymity of experts, the control feedback and a statistical group response, because all opinions form part of the final answer, obtaining the most reliable consensus of opinion (Dalkey and Helmer, 1962).

The researchers must create a carefully designed and controlled process, preparing the different sections with questions about the topic of the study and establishing the definition of consensus. Consensus means the existence of an agreement on the

responses among group members on a particular topic. The number of survey rounds finishes when criteria for consensus are achieved and when results become repetitive or when an impasse is reached (Pina *et al.,* 2011). The experts must be consulted at least twice on each question (Landeta and Barrutia, 2011) through three rounds (Powell, 2003), unless the consensus reached in the first round is considered sufficient (Ishikawa *et al.*, 1993).

We have used two rounds, in order to obtain congruous results. As for the definition of consensus, the previous literature suggests different techniques such as the relative interquartile range, the typical deviation of different resulting distributions or the coefficient of variation (Landeta, 1999, Landeta and Barrutia, 2011). In this study the consensus is defined following Torres (2005), Torres *et al.* (2005) and Pina *et al*., (2011): the survey questions have five options (one to five) so consensus is achieved when the mean value of answers is between 1 and 2.33 or between 3.66 and 5.We have also used the definition of consensus for this study according to Garmendia (2002), and considering that there is consensus when an answer has a percentage equal or greater than 80% of the votes. In case of a divergence of conclusions among the techniques we have chosen the most restrictive criteria in order to decide what question must be consulted with a second round. In the Delphi method consensual answers are important but so are non-consensual responses.

We prepared a questionnaire composed of five sections in order to obtain a comprehensive analysis of NFR by observing the opinions of pioneers in the introduction of this information in Spanish MOCs. The first two deal with the objective of NFR and the comparability of the information which facilitates the reporting; both sections have been prepared with Likert Scale questions from 1 to 5, 1 being 'Totally disagree' and 5 'Totally agree'. The following three refer to each different group of indicators (KPIs) established by AECA (*Environmental, Social* and *Corporate Governance,* respectively) and with Likert Scale questions about the degree of difficulty which experts have experienced in preparing the indicators and the degree of utility of each indicator, being numbered as follows: 1 'Not at all', 2 'A little', 3 'Neutral', 4 'Considerably', 5 'A lot'. Regarding the selection of experts, Landeta (1999) states that the number selected depends on the area of knowledge, geographic scope, groups that

may participate, degree of motivation, organisational capacity or time available. Cantrill et al. (1996) considers that four experts could be enough in some cases. The panel of experts in our study is composed of those from the following seven corporations selected in the first part of this work as pioneers in the introduction of NFR: *Madrid EMT, Barcelona Activa, Barcelona B:SM, Sevilla TUSSAM, Palma EMAYA, Córdoba SADECO* and *Rivamadrid*). *Madrid EMT* is responsible for the management and operation of urban bus services, public bicycles (BiciMAD), municipal cranes, public and resident car parks, and cable cars. *Barcelona Activa* offers advice, training, support and networking for companies. *Barcelona B:SM* provides municipal services related to mobility, culture and biodiversity. *Sevilla TUSSAM* manages the urban public transport system. *Palma EMAYA* provides water supply, sewage treatment, waste collection and street cleaning, renewable energy and mobility services. *Córdoba SADECO* manages and coordinates urban waste collection, treatment and final destination, especially dedicated to recycling and compost production, street cleaning and cleaning of schools and municipal public buildings. *Rivamadrid* manages street cleaning, maintenance and cleaning of parks and gardens and the cleaning of public schools and institutional buildings.

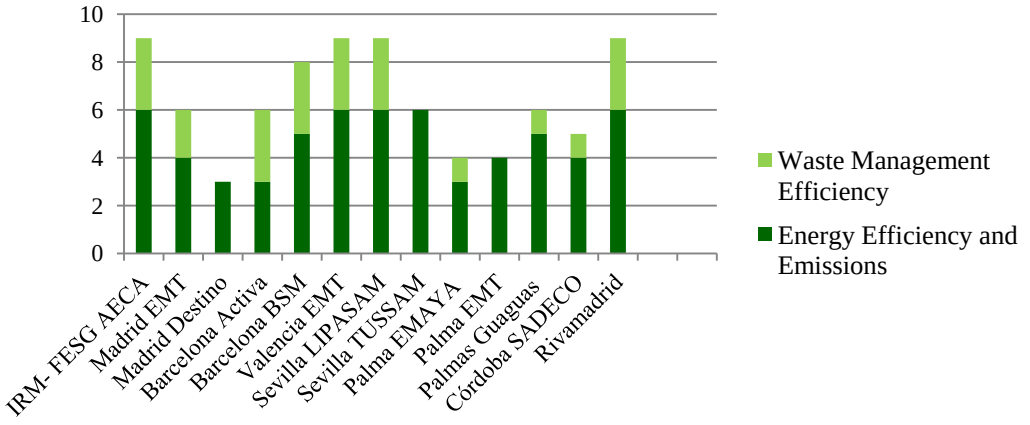
The initial contact with panellists was by phone in order to have contacts. We provided them with the electronic survey by Google Forms, including the instructions to complete it. The process of contacting with the MOCs, showing the survey and obtaining answers lasted six months. The starting point of the study began in December 2020. We received the last answer in the first round in April 2021. From this moment we were focused on the analysis of the results. We started the second round of the survey in May 2021, sending each corporation an email which contained the main aggregated results, their chosen answers in the first round and the electronic questionnaire with the questions within consensus was not reached. We also reviewed and checked the corporations included in the October 2021 sample to see whether any more companies submitted statements during this NFR period.

3.5. Analysis of results

Focusing on the first objective of this paper, the following figures represent the number of indicators (vertical axis) which have been reported by companies (horizontal

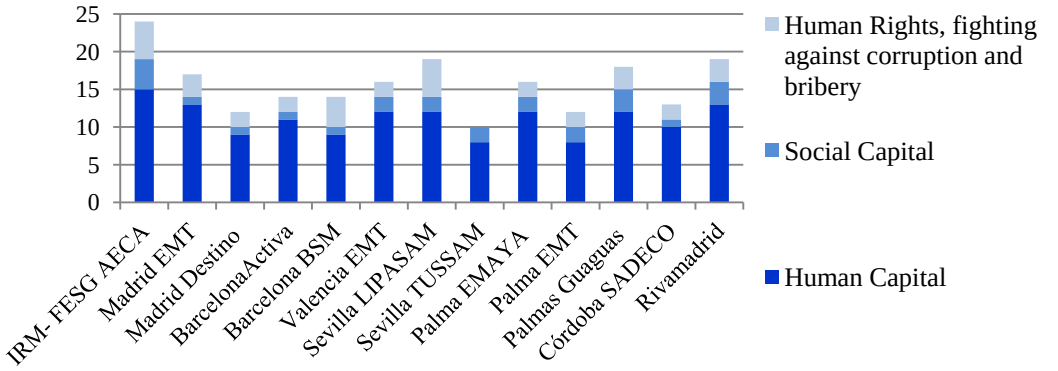
axis) compared with the number of indicators which AECA defines in IRM-FESG represented in the first bar of the graph. Graphs 5, 6 and 7 show the respective *Environmental*, *Social* and *Corporate Governance indicators* reported by the MOCs studied.

Graph 5. Environmental indicators reported by company.



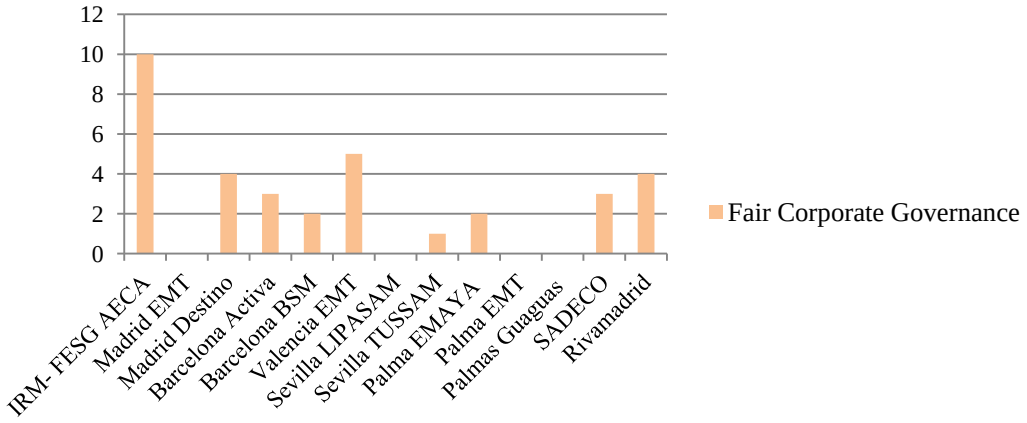
In *Energy Efficiency and Emissions typology*, the number of indicators established by AECA must be six. We can see that all companies reported at least 50% of these indicators, *Valencia EMT*, *Sevilla LIPASAM*, *Sevilla TUSSAM* and *Rivamadrid* being the companies which report 100 per cent of these indicators. In the case of *Waste Management Efficiency*, the number of indicators defined by AECA must be three. We can see that *Barcelona Activa*, *Barcelona BSM*, *Valencia EMT*, *Sevilla LIPASAM* and *Rivamadrid* report all these indicators. *KPI_E1 Energy consumption* and *KPI_3 Polluting emissions Scope 1, directly measuring greenhouse gases emissions*, are reported by all corporations. In contrast, there is one indicator which only one company reports (*Palmas Guaguas*): *KPI_E6 Transportation emissions and distribution in Downstream activities Scope 3*.

Graph 6. Social indicators reported by company.



In Graph 6, the *Human Capital* typology shows a high level of reporting, *Madrid EMT* and *Rivamadrid* being the corporations with most indicators reported, 90%. As for *Social Capital* indicators, we find that five corporations only report 25% of indicators, which means a low level of reporting. Only *Palmas Guaguas* and *Rivamadrid* submit 75% of indicators. In the *Human Rights, fighting against corruption and bribery* typology, where AECA recommends reporting five indicators, *Sevilla LIPASAM* is the corporation which submits 100% of the indicators. In *Social indicators*, we have identified seven indicators submitted by all companies, which means a high level of reporting: *KPI_S1 Employees*, *KPI_S2 Gender diversity of employees*, *KPI_S3 Top management positions*, *KPI_S4 Gender diversity of top employees*, *KPI_S5 Job stability*, *KPI_S14 Employee training*, *KPI_S19 Payment to suppliers*. In this category we find two indicators which are not reported by any company: *KPI_S13 Seniority* and *KPI_S18 Suppliers, application of policy on supplier relations*.

Graph 7. Governance corporative indicators reported by company.



The total amount of indicators which must be reported in the *Fair Corporate Governance* typology is ten. *Valencia EMT* present 50% of indicators required, and the level of reporting at *Madrid Destino* and *Rivamadrid* is 40%. This is the typology of indicators with a lower degree of reporting (Table 3): *KPI_CG1 Board members* and *KPI_CG9 Gender diversity on Management Board* are the only indicators where more companies submit this information, and there is no information about six indicators.

This analysis allows us to establish a ranking across the sample by comparing the total indicators that IRM-FESG suggest reporting (59 indicators), *Rivamadrid* being the company which reports the highest number of indicators (48), followed by *Valencia EMT (46), Sevilla LIPASAM* (44), *Palmas Guaguas* (41), *Barcelona B:SM* (40), *Madrid EMT* and *Barcelona Activa* (39), *Madrid Destino, Palma EMAYA* and *Córdoba SADECO* (37), *Sevilla* TUSSAM (33) and *Palma EMT* (32).

With respect to the results of the Delphi method, a comparative table for each section is shown containing the mean for both rounds and the results in Likert Scale format. The results of Section 1 are shown in Table 22. There is a consensus about the objective of NFR in achieving an improvement in the fair image of the activities carried out by the municipally owned company, improving the information provided to the public, to other Public Administrations and to suppliers, giving a score of 5 (totally agree). Experts also agree that the objective of NFR is to improve the information provided on company costs. In this section there is only one question where a consensus

is not reached: the objective of submitting this information is to improve fulfilment of company objectives.

Table 22. Section 1: Objective of presenting Non-Financial Report

The objective of the presentation of the Non-Financial Information Statement of municipal companies is to achieve an improvement in ...

	Round 1						Round 2					
	Mean	Totally disagree				Totally agree	Mean	Totally disagree				Totally agree
		1	2	3	4	5		1	2	3	4	5
1. ... The fair image of the activities carried out by the municipal company.	4.86				14%	**86%**						
2. ... The information provided to the citizen.	4.86				14%	**86%**						
3. ... The information provided to other Public Administrations.	4.86				14%	**86%**						
4. ... The information provided to suppliers.	4.86				14%	**86%**						
5. ... The fulfillment of the objectives of the company.	4.14			28%	29%	43%	4.00			29%	43%	29%
6. ... The information provided on the costs of the company.	3.86			14%	**86%**							

The results of Section 2 (Table 23) show unanimity of replies regarding the disclosure of this report facilitating the comparability of information from other similar municipal companies. The panel of experts indicate a strong consensus about NFR facilitating the information prepared by the corporation in previous years and about the reporting also facilitating information from other municipal companies by central government. We can see a strong agreement but no consensus regarding the comparability of information from other municipal companies at different local administrations, by the local administration. There is no agreement in the case of NFR facilitating information from other municipal companies at different local administrations, bu the Autonomous government. This may be because the reports submitted are collected by Central government. Autonomous governments do not intervene in NFR. Table 4 shows that there is no consensus about this reporting facilitating information from other municipal companies at different local administrations, by the providers and by citizens. Although indicators are stated in terms of the measuring unit, more common elements as a reference are required in order to compare them.

Table 23. Section 2: Information comparability.

The presentation of the Non-Financial Report facilitates the comparability of the information provided by the company, with respect to...	Round 1						Round 2					
	Mean	Totally disagree				Totally agree	Mean	Totally disagree				Totally agree
		1	2	3	4	5		1	2	3	4	5
1. ... The information prepared by the company society in previous years.	4.86				14%	**86%**						
2. ... The information of other similar municipal companies.	3.86		14%		71%	15%	4.00				**100%**	
3. ... The information of other municipal companies of different local administrations, by the local administration.	3.43		14%	29%	57%		3.71			29%	71%	
4. .. The information of other municipal companies of different local administrations, by the autonomous government.	3.43		14%	29%	57%		3.43		14%	29%	57%	
5. .. The information of other municipal companies of different local administrations, by the central government.	3.86			14%	**86%**							
6. ... The information of other municipal companies of different local administrations, by the providers	2.86		43%	29%	28%		2.86		43%	29%	28%	
7. ... The information of other municipal companies of different local administrations, by citizens	2.71	14%	28%	29%	29%		3.00	14%	14%	29%	43%	

Within Section 3, *Environmental indicators* (Table 24), in *Energy Efficiency and Emissions* indicators, there is only one indicator which achieves the consensus (*KPI_E4 Polluting emission Scope 2*) with a strong agreement of those interviewed regarding the degree to which they consider it a very useful indicator. Although there is no consensus, the managers consider that these indicators are highly useful. Regarding the opinion about the level of difficulty found in preparing these indicators, in the case of *KPI_E1 Energy consumption* and *KPI_E2 Water consumption* the highest score where experts coincide is 'a little' difficult to calculate it. In contrast, experts found it 'considerably' difficult in preparing indicators about emissions. These indicators are required for all companies, without considering the service they provide. The level of difficulty in implementing environmental indicators may vary depending on the service provided. As regards *Waste Management Efficiency indicators*, *KPI_E7 Waste generation* and *KPI_E8 Waste processed* are found to be very useful. The level of difficulty is considered very high in *KPI_E9 Recovered waste* and at a low level in generation and processed waste.

Table 24. Section 3: Environmental indicators.

			Round 1							Round 2						
			Mean	Not at all	A Little	Neutral	Considerably	A Lot	No Answer	Mean	Not at all	A Little	Neutral	Considerably	A Lot	No Answer
ENVIRONMENTAL INDICATORS																
Energy Efficiency and Emissions																
KPI_E1	Energy consumption	Difficulty	2.29	14%	57%	14%	15%			2.57		71%	14%		15%	
		Utility	4.57				43%	57%		4.57				43%	57%	
KPI_E2	Water consumption	Difficulty	2.67	14%		43%	14%	14%	15%	2.71		71%		14%	14%	
		Utility	4.50				43%	43%	14%	4.43				57%	43%	
KPI_E3	Polluting emissions Scope 1	Difficulty	3.14		43%		57%			3.43		29%		71%		
		Utility	4.57				43%	57%		4.57				43%	57%	
KPI_E4	Polluting emissions Scope 2	Difficulty	3.29		29%	14%	57%			3.29		29%	14%	57%		
		Utility	4.86				14%	**86%**								
KPI_E5	Transportation emissions and distribution in Upstream activities Scope 3	Difficulty	4.14		14%	43%	43%			4.00		14%		57%	29%	
		Utility	4.29		14%	29%	57%			4.29			14%	43%	43%	
KPI_E6	Transportation emissions and distribution in Downstream activities Scope 3	Difficulty	4.14		14%		43%	43%		4.14		14%		43%	43%	
		Utility	4.00		14%	14%	29%	43%		4.14			14%	57%	29%	
Waste management efficiency																
KPI_E7	Waste generation	Difficulty	2.57	15%	57%		14%	14%		2.57		71%		29%		
		Utility	4.86				14%	**86%**								
KPI_E8	Waste processed	Difficulty	2.43	14%	57%		29%			2.43		71%	14%	15%		
		Utility	4.86				14%	**86%**								
KPI_E9	Recovered waste	Difficulty	3.71		14%		**86%**									
		Utility	4.43			14%	29%	57%		4.29			14%	43%	43%	

Focusing on *Human Capital indicators* (Section 4), there is a strong consensus in the following indicators (Table 25): *KPI_S1 Employees and KPI_S10 Absenteeism*, being considered highly useful. And, on the other hand, in *KPI_S1 Employees*, *KPI_S2 Gender diversity of employees*, *KPI_S9 Occupational risk*, *KPI_S12 Net employment* and *KPI_S14 Employee training* indicators, experts achieve an agreement about the level of difficulty, concluding that it is low to medium. In the rest of the indicators, there is no consensus but the opinions of experts indicate that they had 'a little' difficulty in their preparation. In addition, those interviewed consider these indicators to be 'considerably' useful. In the case of *Social Capital indicators* (Table 25), the analysis of replies shows that there is a strong agreement about the high utility of *KPI_S16 Legal regulation concerning customers* and low difficulty in calculating *KPI_S19 Payment to suppliers*. Excepting *KPI_S18 Suppliers, application of policy on supplier relations*, which experts totally disagree on; the main conclusion is that there is a low level of difficulty and high level of utility in preparing these indicators. To conclude on this section, in the case of *Human Rights, fighting against corruption and bribery* indicators, results indicate that there is a strong consensus about their high level of utility (Table 7): *KPI_S20 Respect from Human Rights*, *KPI_S21 Actions in defence of Human Rights*, *KPI_S23 Irregularities in terms of corruption and bribery* and *KPI_S24 Proceedings in cases of corruption and bribery*. Although there is no agreement about the level of difficulty, the highest scores indicate that the calculation is low to medium difficult.

Table 25. Section 4: Social indicators.

			Round 1							Round 2						
			Mean	Not at all	A Little	Neutral	Considerably	A Lot	No Answer	Mean	Not at all	A Little	Neutral	Considerably	A Lot	No Answer
SOCIAL INDICATORS																
Human Capital																
KPI_S1	Employees	Difficulty	2.14		**86%**	14%										
		Utility	4.14				**86%**	14%								
KPI_S2	Gender diversity of employees	Difficulty	2.14		**86%**	14%										
		Utility	4.43				57%	43%		4.43				57%	43%	
KPI_S3	Top management positions	Difficulty	2.14	14%	57%	29%				1.86	29%	57%	14%			
		Utility	4.29			14%	43%	43%		4.43				57%	43%	
KPI_S4	Gender diversity of top employees	Difficulty	2.71	14%	29%	43%		14%		2.00	29%	43%	28%			
		Utility	4.00			29%	42%	29%		4.00			29%	42%	29%	
KPI_S5	Job stability	Difficulty	2.33		57%	29%			14%	2.14	14%	57%	29%			
		Utility	4.50				43%	43%	14%	4.43				57%	43%	
KPI_S6	Right to paternity leave	Difficulty	2.43		57%	43%				2.29		71%	29%			
		Utility	4.29			14%	43%	43%		4.43				57%	43%	
KPI_S7	Right to maternity leave	Difficulty	2.43			43%	57%			2.29		57%	43%			

		Utility	4.29	14%			43%	43%		4.43				57%	43%	
KPI_S8	Disability	Difficulty	2.29		71%	29%				2.29		71%	29%			
		Utility	4.29			14%	43%	43%		4.29			14%	43%	43%	
KPI_S9	Occupational risk	Difficulty	2.86		14%	**86%**										
		Utility	4.29			14%	43%	43%		4.29			14%	43%	43%	
KPI_S10	Absentee	Difficulty	2.71		43%	43%	14%			2.71		43%	43%	14%		
		Utility	4.71				14%	**86%**								
KPI_S11	Employee turnover	Difficulty	2.43		57%	43%				2.43		57%	43%			
		Utility	4.14			14%	57%	29%		4.14			14%	57%	29%	
KPI_S12	Net employment	Difficulty	2.14		**86%**	14%										
		Utility	3.71			43%	43%	14%		3.71			43%	43%	14%	
KPI_S13	Seniority	Difficulty	2.00	14%	71%	14%				2.00	14%	71%	15%			
		Utility	4.14			14%	57%	29%		4.14			14%	57%	29%	
KPI_S14	Employee training	Difficulty	2.00	14%	57%	14%			15%	2.14			**86%**	14%		
		Utility	4.33			14%	29%	43%	14%	4.14			14%	57%	29%	
KPI_S15	Employees under collective agreement	Difficulty	1.86	29%	57%	14%				1.86	29%	57%	14%			
		Utility	3.71		28%		43%	29%		3.71		28%		43%	29%	
Social Capital																
KPI_S16	Legal regulation concerning customers	Difficulty	2.29		71%	29%				2.29		71%	29%			
		Utility	4.29				**86%**	14%								
KPI_S17	Supply chain	Difficulty	2.57		71%	14%		15%		2.43		71%	14%	15%		
		Utility	4.14			14%	57%	29%		4.29				71%	29%	

KPI_S18	Suppliers, application of policy on supplier relations	Difficulty	3.83		14%	14%	29%	29%	14%	3.14	14%	29%	14%	14%	29%	
		Utility	3.33		29%	14%	29%	14%	14%	3.29	14%	14%	14%	43%	15%	
KPI_S19	Payment to suppliers	Difficulty	2.14		**86%**	14%										
		Utility	4.43				57%	43%		4.43				57%	43%	
Human Rights, fighting against corruption and bribery																
KPI_S20	Respect from Human Rights	Difficulty	2.57		71%	14%		14%		2.43	14%	57%	14%	15%		
		Utility	4.14				**86%**	14%								
KPI_S21	Actions in defence for Human Rights	Difficulty	2.57	14%	29%	29%	14%			2.57	14%	29%	43%	14%		
		Utility	4.14				**86%**	14%								
KPI_S22	Training for fighting against corruption and bribery	Difficulty	2.67		29%	43%			14%	2.71		29%	71%			
		Utility	3.83		14%	14%	29%	29%	14%	3.86		14%	14%	43%	29%	
KPI_S23	Irregularities in terms of corruption and bribery	Difficulty	2.00	14%	71%	14%				2.00	14%	71%	15%			
		Utility	4.14				**86%**	14%								
KPI_S24	Proceedings in cases of corruption and bribery	Difficulty	2.29	14%	43%	43%				2.14	14%	57%	29%			
		Utility	4.14				**86%**	14%								

A strong agreement is found in Section 5 about *Fair Corporative Governance indicators* (Table 26) regarding the medium to high utility in *KPI_CG3 CRS board members, KPI_CG8 Total remuneration of the Board* and *KPI_CG9 Gender diversity on Management Board* indicators. There is not a high degree of consensus in this section, but it seems that corporative governance topics have been deeply established for years in companies: experts argue that indicators have a low to medium difficulty. The opinion of those surveyed indicates a medium utility for these indicators.

Table 26. Section 5: Fair Corporative Governance indicators.

			Round 1							Round 2						
			Mean	Not at all	A Little	Neutral	Considerably	A Lot	No Answer	Mean	Not at all	A Little	Neutral	Considerably	A Lot	No Answer
FAIR CORPORATIVE GOVERNANCE																
KPI_CG1	Board members	Difficulty	1.86	29%	57%	14%				1.86	29%	57%	14%			
		Utility	3.29		14%	43%	43%			3.14		14%	57%	29%		
KPI_CG2	Independent board members	Difficulty	2.14	14%	57%	29%				1.57	57%	29%	14%			
		Utility	3.14		29%	29%	43%			3.00	14%	14%	29%	43%		
KPI_CG3	CRS board members	Difficulty	1.83	43%	14%	29%			14%	2.00	43%	14%	43%			
		Utility	2.83	14%	14%	29%		29%	14%	3.14		14%	57%	29%		
KPI_CG4	Executive committee	Difficulty	2.00	29%	29%	28%			14%	2.00	29%	43%	28%			
		Utility	3.17		14%	42%	29%		15%	3.14		14%	57%	29%		
KPI_CG5	Audit Committee	Difficulty	2.00	29%	29%	28%			14%	2.14	29%	28%	43%			
		Utility	3.50			43%	43%		14%	3.43			57%	43%		
KPI_CG6	Nominations Committee	Difficulty	2.00	29%	29%	28%			14%	2.14	29%	28%	43%			
		Utility	2.83	14%	14%	29%	29%		14%	2.86	14%	14%	43%	29%		
KPI_CG7	Meeting of the Board	Difficulty	1.83	29%	43%	14%			14%	1.86	43%	29%	28%			
		Utility	3.17		29%	14%	43%		14%	3.00	14%	14%	29%	43%		
KPI_CG8	Total remuneration of the Board	Difficulty	1.86	29%	57%	14%				1.86	29%	57%	14%			
		Utility	3.86			14%	**86%**									
KPI_CG9	Gender diversity on Management Board	Difficulty	2.29	29%	43%	14%		14%		2.71	15%	43%	14%	14%	14%	
		Utility	4.14				**86%**	14%								
KPI_CG10	Corruption and bribery	Difficulty	2.17	29%	29%	14%		14%	14%	2.14	29%	43%	14%	14%		
		Utility	4.00			29%	29%	28%	14%	3.86			43%	29%	28%	

3.6. Discussion

The hybrid character of MOCs creates an enabling environment for the introduction of NFR, before its application to all local governments. The evidence shows that the MOCs analysed are conscious about the importance of NFR. Their reports include an exhaustive and descriptive study of non-financial indicators, submitting the majority of indicators required by law. Hybrid entities are perfectly able to prepare high quality NFR that supplement financial information (Biondi *et al.*, 2018). The perspective of not only reporting financial information reinforces the commitments of corporations to other aspects such as the environmental arena. However, we have detected that some municipally owned corporations within the subjective scope of *Law 11/2018* do not submit this report. As La Torre (2020) states, it is necessary to reinforce efforts in NFR development because some corporations do not yet publish them.

At present, NFR shows the level of transparency, but the absence of assessment has already caused a non-relationship between objectives and reporting. The indicators included in NFR are calculated, but not evaluated. This means that companies report this information, but they are not sure whether their indicators are good or bad. The lack of NFR evaluation does not allow them to be conscious of the non-financial situation of the company. Maybe it is for this reason that this statement does not improve the fulfilment of company objectives. In the case of financial information, the law plans the application of corrective actions when a breach occurs, affecting company objectives because they have to recover from the financial situation. NFR could be enhanced in the future, if the information and the indicators included could not only be compared over years but also with similar corporations. It would in this way be useful, not only for accountability purposes but also for managers of corporations to make decisions. A report with comparable information would encourage management effectiveness (Tylec, 2020), because it allows corporations to be sure that their indicators are good or bad. Although stakeholders can consult non-financial information because it is publicly accessible, comparability is not possible without a benchmark or a point of reference. A common nomenclature of non-financial indicators would improve the comparability of companies with the actual corporation and with others of similar characteristics. The existence of a homogeneous nomenclature would allow a comparison of non-financial information.

A common classification of non-financial indicators with similar contents would facilitate comparability, not only among Spanish MOCs but also internationally. Comparability is currently a pending issue. The homogenisation of information is the reason for the *Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions* working to find a European taxonomy for this information. According to their Communication of May 2021, extensive work has been carried out and put forward by the European Union (EU) Taxonomy Climate Delegated Act under the framework of the European Green Deal. The proposal of the Corporate Sustainability Reporting Directive aims to provide common European reporting rules in order to increase transparency by making the information comparable. The Taxonomy framework would make it possible to increase access to sustainable financing beyond currently existing market-based green finance tools, i.e. the non-financial paradigm is continually growing and expanding. The indicators are required for all companies, without considering the service they provide. For example, the level of difficulty in the implementation of environmental indicators may vary depending on the kind of service provided. Some indicators enjoy a higher level of consensus than others. For example, those for *Human Rights, fighting against corruption and bribery* achieve a strong consensus regarding their high level of utility.

This study also underlines interesting points from a theoretical perspective. The consensus about an improvement in the fair image of the activities carried out by the municipally owned company through the NFR is in line with legitimacy and stakeholder theories. Disclosure of non-financial information implies legitimising the practices of the company by improving the public's perceptions. For the company, NFR disclosure enhances the information provided to the citizen, other Public Administration and suppliers. Therefore, there is a clear commitment from companies with stakeholders whose opinions are very important for them.

3.7. Conclusions

The aims of this article are to study the disclosure of non-financial information at Spanish MOCs and analyse the opinions of the experts who prepared the first NFR. Of all the MOCs obliged to disclose non-financial information, we have identified 12 corporations that submitted NFR information in 2018 and 2019. We obtained

homogeneous information about the reports thanks to the application of *Integrated Reporting Model Environmental*, *Social* and *Corporate Governance* (IRM-FESG) by AECA. *Social indicators* are the typology with more indicators reported by corporations. However, all the indicators about *Energy Efficiency* and *Emissions and Waste Management Efficiency* are reported by less than half of the corporations analysed. In the case of *Fair Corporative Governance Indicators* the number of indicators reported is extremely low. The analysis of the opinions of experts was studied by using Delphi method. Experts from seven MOCs involved in the Delphi method consider the main objective of this report is to improve the fair image of the activities carried out by the MOC in terms of the public, other public organizations (including SOCs) and suppliers (legitimacy and stakeholder theories). Disclosure of NFR facilitates the comparability of information from other similar municipal companies. However, there is no consensus, regarding the comparability of information from other MOCs in different local authorities. There is a lack of improvement in this initiative for MOCs to see this utility. Developing a homogeneous nomenclature and contents would allow the comparison of non-financial information. The NFR disclosure does not help to fulfil MOCs' objectives, so it is possible that its evaluation would imply the existence of a relationship between reporting and objectives. In addition, MOCs prepare the NFR, but they do not evaluate the indicators. The absence of evaluation implies that corporations prepare the report but that it is not used in order to carry out a good corporate strategy. In addition, the indicators are required for all companies, without considering the service they provide. It implies that corporations whose service provided is culture have a greater difficulty in preparing greenhouse emissions indicators than a corporation whose service is waste collecting and treatment. According to the typology of indicators, the utility of *Environmental*, *Social indicators* and *Human Rights, fighting against corruption and bribery* is high whereas the difficulty in preparation the indicators is low to medium (legitimacy and stakeholder theories). As for *Corporate Governance indicators*, experts agreed about the medium to high utility of board members and gender diversity (coercive isomorphism of institutional theory). This study highlights the lesson to be learnt by other MOCs and all local entities which would probably be obliged to include this report in their integrated reporting in a near future. The experience of experts in this study can be useful for policymakers and public sector organisations which require NFR disclosure in order to improve and reinforce the

legislation in this area. NFR opens up a new research field in Public Administration for future studies to improve its transparency, not only in financial matters but also in environmental and social areas

APPENDICES

Appendix 1. Integrated Scoreboard: IRM- FESG from AECA

FINANCIAL INDICATORS

Code	Denomination	Definition	Observations
Economic Efficiency			
KPI_F1	**Revenue**	Total revenues of the year	Addition of all revenues coming from sales and services provided, work performed by the entity capitalized, increase (decrease) in inventories, from financial and non-financial investments and from selling intangible and tangible assets.
KPI_F2	**Suppliers expenses**	Expenses related to purchases and services	Expenses related to purchase by suppliers and other operations.
KPI_F3	**Added value**	Addition of outflows to all stakeholders.	Revenue suppliers expenses
KPI_F4	**Employee benefits**	Expenses related to employee compensation.	Employee expenses.
KPI_F5	**EBITDA**	Earnings Before Interest, Taxes, Depreciation and Amortization	Addition of profit or loss after taxes, plus financial expenses income taxes and depreciation-amortization.
KPI_F6	**Financial expenses**	Financial costs.	Expenses related to liabilities.
KPI_F7	**Owners retribution**	Dividends to owners/ investors (dividends to all shareholders)	Dividends and similar retribution to investors, as proposal from Management Board to Shareholders.
KPI_F8	**Income taxes**	Income taxes	Income taxes registered as expense.
KPI_F9	**Economic contribution to the community**	Donations and financial help, of altruist character	Amount of contribution payments to the community
KPI_F10	**Total contribution to Public Administration**	Payments to public agencies.	Total payments to public agencies.
KPI_F11	**I+D+I Investment**	Economic contribution to research, development and innovation activities.	Total expenses and increase of assets related to research, development and innovation activities.
KPI_F12	**Total investment**	Net increase of assets	Net increase of total assets
KPI_F13	**Profitability**	Return on assets	Profit (loss) of the year/Equity
KPI_F14	**Level of debts**	Level of debt at the end of the year, divided by equity	Current and noncurrent liabilities/ Equity
KPI_F15	**Treasury shares**	Book value of treasury shares	Treasury shares/ Equity
KPI_F16	**Grants**	Public subsidies received	Amount of public funding received

ENVIRONMENTAL INDICATORS

Code	Denomination	Definition	Observations

Energy Efficiency and Emissions			
KPI_E1	**Energy consumption**	Direct energy consumption in gigajoules (GJ)	GJ of energy consumption
KPI_E2	**Water consumption**	Water consumption in cubic meters (m3)	Water consumption in cubic meters (m3)
KPI_E3	**Polluting emissions Scope 1**	Greenhouse gases emissions, directly deductible from energy consumption	Direct greenhouse gasses in CO2 equivalent tons
KPI_E4	**Polluting emissions Scope 2**	Greenhouse gases emissions, indirectly deductible from energy consumption	Indirect greenhouse gasses in CO2 equivalent tons
KPI_E5	**Transportation emissions and distribution in Upstream activities Scope 3**	Total emissions generated by transport	Sum of transmission and distribution emissions in Upstream activities in equivalent tons of CO2
KPI_E6	**Transportation emissions and distribution in Downstream activities Scope 3**	Total emissions generated from transport	Sum of transmission and distribution emissions in -Downstream activities in equivalent tons of CO2
Waste Management Efficiency			
KPI_E7	**Waste generation**	Waste generation, hazardous and nonhazardous	Waste generation in tons
KPI_E8	**Waste processed**	Waste processed, over total residues generated	Tons of waste processed
KPI_E9	**Recovered waste**	Waste recovered	Waste recovered in tons

SOCIAL INDICATORS

Code	Denomination	Definition	Observations
Human Capital			
KPI_S1	**Employees**	Employees with a labour contract	Number of employees with a contract at year end
KPI_S2	**Gender diversity of employees**	Women with a labour contract	Number of women with a contract at the year
KPI_S3	**Top management positions**	Employees with a labour contract in top management positions	Number of employees with a contract in top management positions, at year end
KPI_S4	**Gender diversity of top employees**	Women with a labour contract in top management positions	Number of women with a contract in top management positions, at year end
KPI_S5	**Job stability**	Employees with a permanent contract	Number of employees with a permanent contract
KPI_S6	**Right to paternity leave**	Male employees on paternity leave	Number of male employees on paternity leave during the year
KPI_S7	**Right to maternity leave**	Female employees on maternity leave	Number of female employees on maternity leave
KPI_S8	**Disability**	Employees with disabilities	Number of employees who have a recognized degree of disability at the end of the year
KPI_S9	**Occupational risk**	Employees who participate in work activities considered high risk	Number of employees who participate in work activities considered high risk by potential occupational accidents or illnesses
KPI_S10	**Absentee**	Lost days due to any cause	Number of days lost by absentee due to any reason life-work related injury or disease or for non professional reasons for all the employees during the reporting period
KPI_S11	**Employee turnover**	Employees who abandon the organization	Total number of employees leaving employment during the reporting period
KPI_S12	**Net employment**	Employment generation or destruction	New contracts- employee turnover
KPI_S13	**Seniority**	Years of performance in the company	Average number of years of permanence of all employees
KPI_S14	**Employee training**	Training received by the employees	Number of training hours for the year
KPI_S15	**Employees under collective agreement**	Percentage of employees working from a collective agreement	Number of employees
Social capital			
KPI_S16	**Legal regulation concerning customers**	Number of incidents of noncompliance with regulation concerning customers	Incidents of noncompliance with regulations resulting in a fine penalty
KPI_S17	**Supply chain**	Incidents in suppliers	Number of complaints due to incidents with suppliers
KPI_S18	**Suppliers, application of policy on supplier relations**	Vendor due diligence on supplier relations	Number of suppliers that apply a due diligence policy regarding conflict zones
KPI_S19	**Payment to suppliers**	Average invoices payment period	Average number of days between invoice dates and payment dates
Human Rights, fighting against corruption and bribery			
KPI_S20	**Respect from Human Rights**	Incidents concerning the respect	Number of incidents during the year

		of Human Rights as a consequence of the actions of the company	
KPI_S21	**Actions in defence for Human Rights**	Initiatives implemented to mitigate the negative effects on Human Rights that the company may have caused	Number of actions and measures
KPI_S22	**Training for fighting against corruption and bribery**	Training to employees on fighting against corruption and bribery	Number of training hours received by employees
KPI_S23	**Irregularities in terms of corruption and bribery**	Incidents and complaints of irregularities about corruption and bribery.	Number of incidents and complaints received regarding corruption and bribery
KPI_S24	**Proceedings in cases of corruption and bribery**	Initiatives in the fighting against corruption and bribery	Number of actions and measures

CORPORATE GOVERNANCE INDICATORS

Code	Denomination	Definition	Observations
Fair corporate governance			
KPI_CG1	**Board members**	Number of board members	Number of board members
KPI_CG2	**Independent board members**	Number of independent board members	Number of independent board members
KPI_CG3	**CRS board members**	Number of independent board members with specific responsibility regarding CSR issues	Number of independent board with specific responsibility regarding CSR issues regardless if they form a CSR committee or not
KPI_CG4	**Executive committee**	Number of members of Executive Committee	Number of members of Executive Committee
KPI_CG5	**Audit Committee**	Number of members of Audit Committee	The Audit Committee is responsible for controlling and monitoring of external and internal auditors
KPI_CG6	**Nominations Committee**	Number of members of Nominations Committee	Number of Nomination Committee members
KPI_CG7	**Meeting of the Board**	Number of meetings of the Board	Number of meetings by the Board annually
KPI_CG8	**Total remuneration of the Board**	Board remuneration costs	Remuneration paid to board members
KPI_CG9	**Gender diversity on Management Board**	Women with a labour contract that have a position in the Management	Number of women at the Management level
KPI_CG10	**Corruption and bribery**	Cases of corruption and bribery on Management Board	Number of incidents of corruption and bribery cases

CONCLUSIONES E INVESTIGACIONES FUTURAS

A continuación, se recogen las conclusiones de esta Tesis Doctoral, así como posibles líneas de investigación futura. Los procesos de control que evalúan la situación financiera de los gobiernos y el aumento de la demanda de transparencia de información tras la crisis financiera de 2008 y la crisis del COVID- 19 están definiendo un nuevo paradigma en la gestión de los gobiernos locales. A través del análisis de la información financiera y no financiera en los gobiernos locales españoles, esta Tesis Doctoral demuestra que el gobierno de España ha puesto en marcha iniciativas legislativas para lograr la sostenibilidad de la prestación de servicios públicos con resultados positivos. La primera conclusión que se puede extraer es que España ha adoptado mecanismos para el seguimiento de la salud financiera de los gobiernos locales españoles, utilizando indicadores financieros aplicados por la ley y la rendición de esta información periódicamente. Esto implica una doble obligación: el cumplimiento de los requisitos de sostenibilidad financiera y la divulgación de esta información. Nuestros estudios han analizado el impacto de la Ley Orgánica de Estabilidad Presupuestaria y Sostenibilidad Financiera en la Administración Pública sobre la situación financiera de los gobiernos locales y si los indicadores financieros españoles son fiables para evaluar la sostenibilidad financiera.

La segunda conclusión que se extrae del estudio que analiza el impacto en la situación financiera de los gobiernos locales, mediante la comparación del efecto antes y después de la implementación de la Ley Orgánica de Estabilidad Presupuestaria y Sostenibilidad Financiera en la Administración Pública, es que se demuestra que la convergencia hacia la media de los indicadores financieros son efectivos, apoyando el enfoque del isomorfismo (isomorfismo mimético y disociación, divulgación de información). Más allá de la explicación del isomorfismo mimético a través de la imitación se plantea otra posible conclusión: los gobiernos locales aprovechan los límites máximos de endeudamiento como estrategia para obtener más recursos financieros. Al disponer de mayor financiación esta se puede destinar a la prestación de servicios de mayor calidad a los ciudadanos. Además, la regulación de las acciones correctivas ante un incumplimiento de las reglas fiscales de estabilidad presupuestaria, regla del gasto o nivel de deuda, ha aumentado la responsabilidad de los órganos de gobierno y de los secretarios-interventores e interventores de los gobiernos locales para

preservar la estabilidad. Ello da lugar a una cuarta conclusión: los requisitos de información han implicado una gestión financiera más estricta y responsable en los gobiernos locales. La obligatoriedad del cálculo y de la rendición de información han provocado distintas reacciones con un planteamiento: la fiabilidad de los indicadores financieros españoles en la medición de la sostenibilidad. Esta Tesis Doctoral muestra cuál es la relación entre los indicadores financieros españoles y los indicadores universalmente aceptados del Financial Trend Monitoring System (FTMS) de la International City/County Management Association (ICMA). La conclusión es que los indicadores financieros españoles están respaldados por los indicadores financieros de referencia generalmente aceptados a nivel mundial. Las implicaciones de esta conclusión son dos. Por un lado, los requisitos de información promulgados en España pueden considerarse como un punto de referencia en otros países porque se ha demostrado su fiabilidad en la evaluación de la situación financiera. Por otro lado, el modelo sugerido para probar la fiabilidad de los indicadores de sostenibilidad financiera en los gobiernos locales es una herramienta válida aplicable para cualquier otro país.

La introducción del concepto de sostenibilidad en la Administración Pública ha puesto de manifiesto la importancia de desarrollar también los aspectos ambientales y sociales. Ser sostenible no solo significa ser responsable en la gestión del gasto público o de la deuda pública, sino también ser responsable con los recursos naturales que nos proporciona el medio ambiente. La obligación de rendir el Estado de Información No Financiera (EINF) refuerza el compromiso de las entidades con el medio ambiente, implicando un comportamiento más ético en el desempeño de sus actividades. La evidencia recogida en esta Tesis Doctoral demuestra que el objetivo principal de este informe es mejorar la imagen de la Administración Pública sujetas al ámbito subjetivo de esta ley. Esta afirmación nos permite sacar la quinta conclusión: la razón principal por la que los gobiernos locales elaboran el EINF es con el objetivo de fortalecer su imagen ante las partes interesadas, con el fin de justificar la legitimidad de las actividades realizadas.

Finalmente, encontramos una respuesta positiva en las entrevistas realizadas a los expertos cuando mostramos el Cuadro Integrado de Indicadores sobre asuntos Ambientales, Sociales y de Gobierno Corporativo (CII-FESG) desarrollado por la

Asociación Española de Contabilidad y Administración de Empresas (AECA). Las opiniones de los expertos muestran que al disponer de un modelo compuesto por indicadores concretos se facilita la divulgación del EINF. La conclusión es que la aplicación de una nomenclatura común en la preparación de la información no financiera es oportuna y necesaria. Ello incrementaría la utilidad del EINF junto con la posibilidad de hacer que este informe sea comparable entre años y entre entidades similares.

La búsqueda de la sostenibilidad financiera a lo largo de casi diez años desde la aprobación de la normativa con la consecuente exigencia de rendición de informes ha abierto una nueva era en todos los niveles de la Administración Pública, especialmente en los gobiernos locales. La combinación de información financiera y no financiera proporciona una visión general de la búsqueda de la sostenibilidad y la rendición de cuentas en el uso de los recursos públicos. El control financiero crea sistemas de alerta para prevenir situaciones de inestabilidad que podrían poner en riesgo la prestación de servicios públicos, mientras que el control no financiero promueve el comportamiento ético y el compromiso ambiental. Ambas perspectivas muestran que la sostenibilidad es posible. El escenario actual basado en encontrar la sostenibilidad es favorable y está en continua evolución, aunque aún queda trabajo por reforzar y desarrollar. Por lo tanto, es importante continuar analizando cómo los gobiernos locales fortalecen sus mecanismos para mostrar la transparencia de las actividades a través de la rendición de informes, impulsándoles a conseguir y mantener la sostenibilidad financiera y no financiera.

Las conclusiones de esta Tesis Doctoral dejan abiertas varias líneas de investigación para el futuro. El análisis de la comparabilidad de los mecanismos de información financiera y no financiera entre países podría proporcionarnos diferentes perspectivas para identificar sinergias de las que podemos aprender. El análisis de la sostenibilidad de las entidades híbridas podría arrojar interesantes conclusiones a partir de un enfoque multidimensional en estudios posteriores. En cuanto a la presentación de informes no financieros, un estudio del coste de la preparación del EINF o el estudio de la relación entre el servicio prestado por cada corporación de propiedad municipal y los indicadores no financieros reportados también podrían abrir nuevas áreas de investigación.

Además, recientemente ha surgido una línea de investigación sobre la sostenibilidad, que consiste en un plan de recuperación para los Estados miembros de la UE, los fondos Next Generation UE, cuyo objetivo es ayudar a reparar el daño económico y social inmediato provocado por los efectos de la pandemia del COVID-19. Los dos instrumentos principales de financiación son el Mecanismo para la Recuperación y la Resiliencia (MRR) y la Ayuda a la Recuperación para la Cohesión y los Territorios de Europa (REACT-EU). Su objetivo es hacer que las economías y sociedades europeas sean más sostenibles. En los fondos Next Generation EU también se define un calendario de rendición de informes dado que las entidades deberán presentar información periódicamente. En España, este aspecto queda regulado en la Orden HFP/1031/2021 del Ministerio de Hacienda sobre la presentación de informes sobre seguimiento del cumplimiento de hitos y objetivos y de ejecución presupuestaria y contable de las medidas de los componentes del Plan de Recuperación, Transformación y Resiliencia. El informe será presentado por las entidades que reciban estos fondos, analizando el grado de ejecución e implementación de la financiación en relación al proyecto. Los gobiernos locales están dentro del alcance de los fondos Next Generation EU, lo cual permitirá seguir investigando sobre la búsqueda y mantenimiento de la sostenibilidad en la administración local.

CONCLUSIONS AND FURTHER RESEARCH

This section includes the main findings and conclusions of this Doctoral Thesis, as well as some further research lines. The control process reviewing the financial condition of LGs and the demands for transparency after the global financial crisis in 2008 and the COVID-19 crisis is defining a new paradigm in Local Government management. By analysing financial and non-financial reporting in Spanish Local Governments, this Doctoral Thesis shows that the Spanish government has launched legislative initiatives to achieve sustainability in the provision of public services with quite positive results. The first conclusion that can be drawn is that Spain has adopted mechanisms for monitoring the financial health of Spanish local governments, using financial indicators enforced by law and reporting this information periodically. This involves a dual requirement: the fulfilment of financial sustainability requirements and the disclosure of this information. Our studies have attempted to analyse the impact of the Organic Law on Budgetary Stability and Financial Sustainability in Public Administration on LG's financial condition and whether Spanish financial indicators are reliable for measuring financial sustainability.

The second conclusion follows from the results of the study into the impact on LG's financial condition, comparing the effect before and after the implementation of the Organic Law on Budgetary Stability and Financial Sustainability in Public Administration, and which shows the effectiveness of indicator disclosure for benchmarking purposes, since those indicators converge in mean and support the isomorphic approach (mimetic isomorphism and disassociation, information disclosure). Beyond the explanation of mimetic isomorphism through imitation, another conclusion is possible: LGs leverage maximum indebtedness limits, as a strategy for obtaining more financial resources. The consequence is the provision of higher quality services to citizens because more funding is available. The *reporting requirements* are currently at the centre of LG's agenda. The third conclusion is that the evaluation of indicators such as *budgetary stability, expenditure rule* and *public debt* at different moments of the year has led to the creation of a strict routine in LGs which shows their financial position. In addition, the regulation of corrective actions when a financial breach occurs has also

enhanced the responsibility of LG managers and controllers to preserve stability. This reveals a fourth conclusion: *reporting requirements* have involved a more stringent and responsible financial management in LGs. *Reporting requirements* have elicited reactions about the reliability of Spanish financial indicators. This Doctoral Thesis shows the relationship between Spanish financial indicators and the benchmarking defined in the Financial Trends Monitoring System Indicators (FTMS) of the International City/County Management Association (ICMA). Therefore, it can be concluded that the Spanish financial indicators are backed up by worldwide generally accepted financial benchmarking indicators. The implications of this conclusion are twofold. On the one hand, *reporting requirements* enacted in Spain can be considered as a point of reference in other countries because their reliability in measuring financial condition has been demonstrated. On the other hand, the suggested model for testing the reliability of financial sustainability indicators in LGs is a valid tool. The search for financial sustainability over nearly ten years of *reporting requirements* has opened a new era in all levels of Public Administration, especially in LGs.

The introduction of the concept of sustainability in Public Administration has shown the importance of developing environmental and social aspects. Being sustainable not only means being responsible about the management of public expenditure or public debt, but also being responsible with the natural resources the environment provides us with. The Non-Financial Report obligation (NFR) reinforces the engagement of entities with the environment, involving a more ethical behaviour in performing their activities. The evidence gathered in this Doctoral Thesis shows that the main objective of this reporting is to improve the image of Public Administration is run. This statement allows us to draw the fifth conclusion: the main reason why LGs engage in NFR is to strengthen their image to stakeholders, in order to justify the legitimacy of the activities carried out.

Finally, we encountered a positive response when we showed the *Integrated Reporting Model for Environmental, Social* and *Corporate Governance* (IRM-FESG) developed by the *Spanish Association of Accounting and Business Administration* (AECA) in interviews conducted with experts. The opinions of experts show that the provision of a model composed of specific indicators facilitates NFR disclosure. The

conclusion is that the implementation of a common nomenclature in the NFR preparation is relevant and necessary. This would support the usefulness of the NFR statement together with the possibility of making this report comparable between both years and similar entities.

The combination of financial and non-financial reporting provides a general view of the quest for sustainability and accountability in the use of public resources. Financial control creates alert systems to prevent situations of instability that could undermine the provision of public utilities, whereas non-financial control promotes ethical behaviour and environmental commitment. Both perspectives show that sustainability is possible. The current scenario of finding sustainability is favourable, and is continually evolving even though much remains to be done. It is therefore important to continue the analysis about how LGs strengthen their mechanisms in order to show the transparency of their activities through reporting. This will drive them to achieve financial and non-financial sustainability.

The conclusion of this Doctoral Thesis outcome leaves opened lines of research and future developments. Aspects such as analysing the comparability of both financial and non-financial reporting mechanisms between countries could give us different perspectives in order to highlight synergies from which we can learn. Analysing the sustainability of hybrid entities could provide conclusions from a multidimensional approach for further studies. As for non-financial reporting, a study of the cost of NFR preparation or examining the relationship between the service provided by each municipally owned corporation and the non-financial indicators reported could also be new areas of research. Moreover, an interesting line for further research into sustainability emerged recently, consisting of a recovery plan for EU Member States: *the Next Generation EU*. This mechanism aims to help repair the immediate economic and social damage brought about by the COVID-19 pandemic effects. The two main instruments of financing are *the Next Generation EU,* and *The Recovery and Resilience Facility* and *Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU)*. Their objective is to make European economies and societies more sustainable. The *Next Generation EU* mechanism also defines a reporting schedule because entities will be required to submit information periodically (in Spain, the Ministry of Finance Order HFP/1031/2021 regarding reporting on *The Recovery and Resilience Facility in*

public sector entities specifies the *Management Report)*. This report will be submitted by entities organizations that receive these funds, analysing their implementation. Local Governments are therefore within the scope of *Next Generation EU* mechanisms, which will allow us to continue researching and studying sustainability.

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