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**ACCRUAL ACCOUNTING IN THE PUBLIC SECTOR: WHY THIS
SUCCESSFUL TRAJECTORY?**

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ABSTRACT

The aim of this paper is to acquire a deeper understanding about accrual accounting implementation in fifty one local governments which belong to twenty EU countries. The reasons for this successful trajectory of GPFS on the accrual basis lay in that dual systems do not require the introduction of deep organizational changes and answer the demands of citizens for higher responsiveness, transparency and accountability, while traditional budgetary statements are maintained for monitoring compliance with legality and for specific decision-making purposes.

Keywords: Accrual accounting, local governments, transparency and accountability

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1.- INTRODUCTION

During the last twenty years, the public sector has been subjected to transformations in order to enhance the efficiency and accountability of public service delivery (OECD 1993a, 1994). Hood (1995), Gray and Jenkins (1995), Olsen and Peters (1996), Guthrie (1999) and other academics describe the main features of transformations brought about in government organizations, in the framework of the New Public Management (NPM) doctrine. Politicians, financial institutions, the media, management consultants and scholars have all played an important role around the world in creating and maintaining an institutional pressure for transformation, as have a range of multilateral organizations (OECD, International Consortium for Financial Governmental Management, World Bank and IMF) which have spread the Anglo-American experience all over the world.

After these two decades of NPM reforms in which the bureaucratic public administration model was strongly criticized, there is, at the moment, a feeling among the citizenry, especially in Anglo-Saxon countries, that 'managerialism' has widened the distance between government and citizens instead of bringing them closer together (Noordhoek & Saner, 2004). There is also citizen dissatisfaction or disengagement which is reflected in a perception that public services are failing and of poor quality (Oakley, 2002). So, the search for new styles of governance through the engagement of citizens is viewed as a way of changing such feelings and of improving citizens' trust in governments. In this regard, in the conclusions of the Sixth Global Forum on Reinventing Government, transparency and new forms of accountability are highlighted as elements of good governance (Kim, Halligan, Cho, Oh & Eikenberry, 2005).

Accountability, and especially financial accountability, has become one key piece, in recent developments around the concept of governance. Accrual accounting is spreading more and more throughout OECD countries and their tiers of government, not only in leader countries in public sector reforms, but also in countries which have received the NPM doctrine with suspicion, such as the European Continental countries. Notwithstanding, the term “accrual accounting” is not always understood in the same way. In almost all countries, accrual accounting has been implemented for the disclosure of general purpose financial statements (GPFS), for external users, overlapped with their traditional budgetary systems. This results in dual or in integrated systems with different degrees of interconnection. Accruals have been also introduced into public budgets, but only in a few countries, emphasizing the use of accrual information for internal purposes.

This paper argues that accrual accounting represents the interest of governments in the improvement of accountability, transparency and citizen engagement as symbols of new governance and enhancement of citizen trust in government. For understanding the successful trajectory of accrual accounting in the public sector of the XXI century, it has to be seen not only as a means but as a goal which seeks to give an image of a new governance style and greater responsiveness to citizens as a way of legitimizing government actions. The aim of this paper is to acquire a deeper understanding about accrual accounting implementation in fifty one local governments which belong to twenty EU countries and five different public administration styles. The countries involved in the survey represent 96% of the present EU population. We have used the information *de facto* disclosed by local government GPFS and this is compared with the legal dispositions issued by each national standard-setting body, taking the IPSASs of the IFAC as a benchmark.

The paper is organized as follows: part 2 describes the theoretical and institutional contexts which are driving and conditioning the trajectory of accrual accounting in the public sector; part 3 describes the methodology applied in the paper; part 4 contains the analysis of results; in part 5 the results are discussed in the framework of some theoretical driving forces and part 6 presents the conclusions of the survey.

2.- THEORETICAL AND INSTITUTIONAL CONTEXTS.

2.1. Theoretical context.

Various theories have traditionally contributed to explaining the introduction of public management reforms into governments through the identification and analysis of the role and drivers of such reforms. One of the most widespread theories is the Public choice theory, which asserts that politicians and government bureaucrats basically pursue their own utility rather than the public interest, in such aspects as career security, better jobs, higher salaries and the entrenchment of power (Buchanan, 1972, 1978; Niskanen, 1971, 1973). Such utility-maximising behaviour and rent-seeking activities give rise to over-expansive budgets and over-supplied public output, which lead to waste, higher costs and, thus, inefficiency (Hood, 1995; Navajas, 1984; Niskanen, 1973; Rees, 1984; Ogden & Anderson, 1999). The monitoring of the public sector is inhibited by the distortion of information flows because, unlike the "simple" principal-agent relationship of the private sector, the public sector has more layers of agencies between the principals (the public) and the agents (the managers) (Letza, Smallman & Sun, 2005). Thus, bureaucrats have an information advantage over the public as a result of information asymmetry, which may lead to adverse choice and moral hazard in hidden actions (Rees, 1984). In this framework of asymmetric information and uncertainty, according to Bendor, Taylor and Gaalen (1985), accrual accounting would be used for monitoring and linking managerial action with principals (citizens and/or central

government), given that GPFS are considered the main vehicle for the disclosure of financial information to external users. The accounting system has always been closely linked to the agency problem in the private sector (agency theory), since accounting has the primary function of producing information for external users -such as owners, investors, lenders and other decision makers- who have no access to internal records and/or special purpose reports. Likewise, as the positive theory of accounting states for the private sector, in the public sector, managers do not find incentives, other than the search for legitimacy, for the disclosure of accounting information under well-defined accounting standards. According to Zimmerman (1977), in organizations with close control from owners or quoted on stock markets, accounting solutions are a balance between different stakeholders' interests (investors, lenders and managers), while in organizations with weak ownership and/or limited control from principals, accounting solutions that favor managers (politicians, chief executives, senior civil servants) tend to be in use.

The institutional theory is being extensively used in recent years by academics for interpreting the adoption of managerial accounting innovations (Ribeiro & Scapens, 2006, Johnsen, 2005). It is mostly concerned with the diffusion and spread of organizational models within a given organizational environment. Institutional theory assumes that organizations respond to pressures from their institutional environments and adopt structures and practices that have high social value as answers to external changes in expectations and formal rules. According to this theory, the adoption of accrual accounting can be viewed as a process of formal compliance with the wishes and expectations of the external environment and stakeholders. Thus, organizations will adopt accrual accounting as a symbol of responsiveness through the introduction of best practices which will be interpreted by citizens as improvements in transparency and

accountability, and not only as the search for greater efficiency, as managerial approaches state. An important issue in this theory is the concept of isomorphism, according to which organizations adopt organizational changes and practices because they have been successfully adopted by other organizations considered as leader adopters of best management practices. Isomorphism may result because of many reasons (DiMaggio & Powell, 1983). It could be: a) coercive, due to legal, hierarchical or resource dependence (in the case of local governments, from central or regional governments), b) environmental pressure for transformation from stakeholders such as politicians, financial institutions, scholars and multilateral organizations, and c) mimetic, in which organizations may imitate practices and models of leading organizations in their institutional field in an attempt to get greater recognition, becoming, in this case, passive adopters of innovations. DiMaggio and Powell (1983) state that governments, which usually have ambiguous objectives and little reliable performance measurements, resort to legitimacy tools in order to show good social benefits and economic yield.

Given that public sector organizations are dependent in almost all cases on central governments in terms of resources and legislation, the formal implementation of structures such as accrual accounting would be used -by central governments as principals and local governments as agents- as a tool for better monitoring local government finances and performance. Furthermore, it can be seen as a sign of good governance in response to institutional and/or social pressure in order to secure legitimacy from constituents and resources from the institutional environment.

2.2.- The institutional context.

Together with the theoretical context, another issue which could contribute to understanding the processes of public management innovation is the public

administration culture in which each public entity develops its activity. The national context of public administrations has been used by various authors (Dunleavy & Hood, 1994, Pollitt & Bouckaert, 2000, Torres 2004) to explain the different features of public sector reforms carried out in the nineties in Western countries. According to these authors, the dissemination of public sector management innovations is influenced by their organizational and administrative culture, historical background and legal structural elements.

In the EU countries there are five broad styles of public management: Anglo-Saxon, Nordic, Germanic, Southern and Eastern EU countries, the second considered, by some authors such as Kickert (1997), to be a mixed form of the Anglo and European Continental types.

- During the 1980s, Anglo-American countries introduced a managerial approach in the public sector which emphasizes efficiency, effectiveness and value for money in public administration. They are more likely to introduce market mechanisms, notions of competitiveness and attempts to make public services more responsive to their users or customers (Sanderson, 2001; Sanderson & Foreman, 1996). All of them have undertaken important initiatives of devolution and they have adapted private sector experience to the public sector. The accounting setting bodies are made up of and governed by professional accounting associations, which are outstanding actors in the shaping and development of accounting systems.

- Nordic countries also belong to a public administration style concerned with meeting citizens' needs which came from the reforms carried out in the 1960s and 1970s based on the UK reforms (Dente & Kjellberg, 1988, USGAO, 2000). They have a tradition of negotiation and consultation (Lane, 1997; Sanderson, 2001; John, 2001). In these countries, accrual accounting is used in agencies because it was deemed useful in

promoting results-oriented management, although Denmark and the Netherlands still maintain the traditional cash accounting at central level.

- The Germanic and Southern EU countries are influenced by structures inherited from a bureaucratic, hierarchical public administration grounded in administrative law. The citizen is traditionally considered as a “subject”, although this view is changing. All of them belong to the ‘Euro-zone’ and are bound to the Treaty of Maastricht which involves rigid requirements of deficit and borrowing. In accordance with Hammerschmid and Meyer (2003), in the Germanic countries the bureaucratic model remains basically Weberian in the framework of a complex federal system and a complex interrelationship between federal government (*Bund*) and the *Länders*. In this model, administrative practice is marked by an overriding legalistic philosophy (*‘Rechtsstaat’*) with Constitutional protection. The *Weisungsprinzip* (principle of directives) establishes a strong hierarchical system both within and between offices, with directives which regulate the functions in considerable detail. Southern European countries are influenced by structures inherited from the French legal model (Kickert, 1997), built around administrative law (Rouban, 1997). Central government defines overarching state rules for field services and there is a unitary treasury system which receives almost all fiscal revenues on behalf of all central, regional and local public authorities. Even in countries with a high degree of decentralization such as Belgium, Spain or Italy, the central government sets common service features for the whole country, collects most tax revenues and maintains offices in provinces and regions.

In the European Continental and Nordic countries, the accounting standard setting bodies depend on a central government department which controls the elaboration of the chart of accounts for the private and public sectors, with the collaboration, to a certain extent and in different degrees, of the accounting profession.

- The Eastern European group is made up of the countries which were under the political and administrative influence of the USSR but now belong to the EU. Centralization was combined with the concentration of power in the highest organs of the state, which were, in turn, controlled by the Socialist Party (Hesse, 1993). So, typically, the first measure of reforms in Eastern countries was to decentralize the state and to provide more power to sub-national elected governments, primarily at a municipal level (Sevic, 2005). In the 90s, Western countries and multilateral organizations pushed for the introduction in these countries of best public management practices in order to introduce mechanisms to assure accountability and the rejection of the old administrative model (Straussman, 2001).

Toonen (1993) identifies five principles that guide Eastern European societies in building their governments: the retreat from the discredited central government in favor of decentralization; the improvement of channels of communication between tiers of government and citizens in response to a demand for participation; a concern for public welfare and social justice in terms of services and human rights; an efficient government administration at all levels within a setting of public review; and internal and external accountability.

3.- METHODOLOGY AND DATA

The data for the study were obtained both from the legal accounting requirements for local administration in each country and from the actual annual accounts of the EU local governments with more than 500,000 inhabitants and country capitals, for the year 2004. We focus our studies on the main cities because these local governments could be a proxy for the state of the art at country level. The resulting sample contains the

following cities: Austria (Vienna), Belgium (Brussels), Denmark (Copenhagen), Estonia (Tallinn), Finland (Helsinki), France (Bordeaux, Lille, Lyon, Marseilles, Paris), Germany (Berlin, Bremen, Dortmund, Duisburg, Düsseldorf, Essen, Hamburg, Hannover, Köln, Stuttgart), Greece (Athens), Hungary (Budapest), Ireland (Dublin), Italy (Genoa, Milan, Palermo, Rome, Turin), Latvia (Riga), Lithuania (Vilnius), The Netherlands (Amsterdam), Norway (Oslo) Poland (Lodz, Poznan, Wroclaw), Portugal (Lisbon), Spain (Barcelona, Madrid, Malaga, Seville, Valencia, Saragossa), Sweden (Stockholm), the United Kingdom (Birmingham, Edinburgh, Glasgow, Leeds, Liverpool, London, Manchester and Sheffield).

For the measurement of disclosures, we have assigned “1” when the information is legally required and actually presented, “2” when it is not required but presented, “3” when it is required but not presented and “blank” when it is not required and not presented. Since there is heterogeneity between the annual accounts of the local governments studied -even within the same country- the recommendations of the IPSAS No.1 have provided the point of reference to establish the elements to be included in the index in order to make the comparison possible.

Exploratory analysis of data was carried out to identify the outstanding characteristics of the local government accounting practices. Cluster analysis, Multidimensional Scaling techniques (MDS) and the Mann-Whitney test have been applied in order to identify homogeneous groups among the local governments studied. Cluster analysis classifies a collection of objects -in our study, EU cities- into a small number of groups or clusters which are mutually exclusive. MDS gives a geometrical description of the relationship between cases from a set of variables. The Mann-Whitney *U* test detects whether there are statistical differences between groups of cases previously defined -in this study, public administration styles-. These statistical techniques have been applied

to the scores (Tables 1 to 3) in order to determine whether there are significant differences in function of public administration style.

Property fitting (Pro-Fit) has also contributed to explaining the MDS configuration. Pro-Fit is a technique closely related to multivariate regression analysis since it attempts to relate the position of an object in the configuration of variable values carried out by MDS for this object. If a variable is related to the position of the object in the MDS configuration, there is a function which relates the variable value to its position in space (Serrano, Mar Molinero & Bossi, 2003). Following this reasoning, ordinary least square regressions were performed for each item analysed.

4.- ANALYSIS OF RESULTS

At legal disposition requirement level, the OECD (1993b) states that, often, most countries require the preparation of, at least, the following statements under the accrual basis: a statement of assets and liabilities of the entity; an operating statement reflecting revenues and expenses and showing net operating position; a cash flow statement related to operating, investment and financing activities; and notes or schedules which clarify or show additional information on a disaggregated basis for users seeking more details.

In the EU local governments studied -except for the Germanic and Eastern groups- legal dispositions require the presentation of local government GPFS under the accrual basis, although not all meet the complete set of IPSAS 1 requirements. Anglo-Saxon, Nordic and Southern European cities should elaborate a balance sheet and an operation statement with inter-period allocations. Both are typical financial statements in accrual and double-entry book-keeping systems and their presentation may be considered as a

first sign of, and a necessary step towards, the implementation of full accrual accounting systems according to the recommendations of the IPSASs. Notwithstanding, a gap between national legal disposition requirements and actual developments can be observed in Tables 1 to 3, especially in some Southern European cities. Conversely, even though the cash basis budget is the legal and prevalent governmental accounting system in Germany¹, some cities, such as Stuttgart and, to a lesser extent, Dortmund have initiated steps towards the introduction of GPFS under the accrual basis.

INSERT HERE TABLE 1

With respect to the contents of the financial report shown in Table 1, a great diversity can be seen in the local governments studied, even within countries. Various types of information can be distinguished. The first type deals with general concepts. Most Anglo-Saxon and Nordic cities provide the highest level of this information. These local governments have accounting systems closer to the private sector style in which detailed notes to the financial statements are included in the financial report. The Germanic, Southern and Eastern EU cities disclose some of this information. In a few of them, such as the French cities, a high degree of non-compliance with legal requirements can be seen, whereas, conversely, Dortmund shows disclosures that are not legally required. In the majority of European continental countries, accrual accounting in local governments has been introduced through a chart of accounts adapted from their chart of accounts for the private sector, and the disclosure of notes to the annual accounts has typically been less than in those based on accounting standards.

The GPFS may also be disclosed with different degrees of completeness: not reporting inter-period allocations, such as depreciation (Milan, Turin, Saragossa and Budapest),

¹ Local government accounting in Germany is ruled by regional governments.

or reporting expenditures instead of expenses² (Dublin and most French and Italian cities), or with different degrees of detail. So, there are different ways in which accrual-based financial information can be reported in GPFS, ranging from simple lists of assets and liabilities, and expenditures, to financial statements that show the financial position, changes in that position and operating results. Consequently, accrual accounting in EU local entities often ranges from different types of modified accrual basis to full accrual. Furthermore, in Italy, local governments can choose to present accrual-based GPFS by either applying a double-entry book-keeping system or adjusting the budgetary information at the end of the accounting period and, in Spain, the double-entry system is applied in accrual accounting and in budgetary execution -elaborated under a receivables and liabilities basis- resulting in a single set of connected GPFS with accrual-based financial statements and an actual budget statement. On the other hand, Germanic and Eastern European cities only present information on the cash basis. In all countries studied, the disclosure of extensive information about the annual budget and its execution is required in the financial report.

INSERT HERE TABLE 2

Table 2 provides information about the extent to which the legal disposition requirements for local government accounting in each country meet the recommendations of the IPSAS 1 for full accrual GPFS, as well as the degree of actual compliance with its own legal dispositions. As can be seen, in general, the items related to monetary assets and liabilities show the highest percentage of disclosure because this information is usually available in budgetary accounting systems as well. Except for the Germanic and almost Eastern European countries, all legal dispositions require the presentation of physical and intangible assets -including infrastructures- on the balance

² As can also be seen in Table 2.

sheet. However, at actual implementation level, high degrees of failures to comply with legal requirements can be seen, even in the UK cities, in items such as accumulated depreciation, intangible assets and infrastructures. Accounting for non-monetary assets is the most complex change in the implementation of accrual accounting in local governments and requires a more active involvement of managers which is not always readily available. Further analysis of this accounting area is carried out in Table 3.

The information dealing with the operation statement also shows a lower degree of fulfillment with IPSAS 1 recommendations than monetary assets and liabilities, especially in annual depreciations and in some expenses such as borrowing costs.

INSERT HERE TABLE 3

Table 3 shows additional insights into the accounting of non-monetary assets -physical and intangible- whose quantity and quality is lower than in other items. Capital accounting has been the center of much of debate surrounding accrual accounting change and the perceived need for greater standardization Lapsley (1999). This is reflected both in the information legally required and that actually disclosed. Only Anglo-Saxon, French and some Nordic cities are legally required to disclose additional information about their non-monetary assets with regard to valuation issues such as depreciation criteria, impairments, changes in valuation criteria, etc. However, failures to comply with the legal dispositions can be observed in Nordic and French cities and, to a lesser extent, in some UK cities, in a higher degree than in other types of information. The reporting of physical and intangible assets in the other countries is even more incomplete, since external users cannot assess the reliability and comparability of these disclosures.

Overall consideration of the results of Tables 1 to 3 shows that the most complete legislation and fulfillment is found in the UK due to both the strength of the accounting profession and the monitoring carried out by central government and audit offices, which have contributed to the implementation of accruals in the public sector. Nordic countries have developed accrual models following the initiative undertaken by Sweden. Even countries such as Denmark and Norway, initially reluctant to the introduction of private sector management tools, now present a level of accrual disclosures similar to some Anglo-Saxon cities. In Southern European countries, local governments show different degrees of compliance with their legal requirements although some local governments disclose more detailed information about financial assets and liabilities than is required by their respective legal dispositions. In general, except for the Germanic and Eastern European countries, the EU local governments studied disclose their actual annual accounts somewhere between the modified and full accrual systems -in accordance with the OECD (1993b) and the IPSAS 1-.

The actual accounting practices chosen by some EU local government managers transform the legally required full accrual basis into some kind of modified accrual basis. This is because some outstanding accrual accounting issues are not effectively implemented, especially in some Southern European cities -such as the French and Italian cities-. The gap between the formal -or legal- design of change (rhetoric) and its actual implementation is not something new and often emerges in public sector reforms (Pollitt & Bouckaert, 2002; Torres, 2004). It could reflect how much the search for symbols of good governance is behind accruals initiatives instead of interest in enhancing transparency and accountability in the public sector.

To what extent the differences observed between public administration styles in Tables 2 and 3 have statistical significance has been analyzed through the non-parametric

Mann-Whitney U test. It tests the hypothesis that the GPFS items belong to the same group against the hypothesis that they belong to different groups -public administration styles. When the p values show scores above 0.05, the hypothesis that there is no statistical difference between the public administration styles studied cannot be rejected. The Mann-Whitney U test only compares two groups at a time; therefore, different combinations between the public administration styles have been carried out.

INSERT HERE TABLE 4

As can be seen in Table 4, the application of the test to Table 2 (Information recommended by the IFAC) finds statistical differences between Anglo-Saxon and European Continental cities and not between Anglo-Saxon and Nordic cities. This is because Nordic local governments belong to a public administration style considered by Kickert (1997) as a mixed form and the Nordic model in the accounting field is located between the Anglo-Saxon and Southern European models. The test does not detect differences between Germanic and Eastern European countries because both maintain cash basis public sector accounting systems.

We can find significant differences between the different public administration styles with regard to the accounting of physical assets -shown in Table 3-, except between the Southern and Eastern groups and the Germanic and Eastern groups. In the first case, this is because of the shortages found in the disclosures of additional information about capital accounting. In the second, because both maintain cash basis accounting.

Exhibit 1 shows the distribution map of cities applying the MDSⁱ technique to the scores shown in Tables 1 to 3. The five groups have been drawn according to their statistical proximity measured through MDSⁱⁱ and cluster analyses (see Appendix 1). As Arabie, Carroll & Desarbo (1987) suggest, it is advisable to carry out the cluster analysis as a

complementary test to the MDS. The results of the Pro-Fit regressions using the ordinal regression PLUM³, are reported in Appendix 2 which shows regression coefficients, their significance and each *R of Nagelkerke* value, as a measure of goodness of fit. Exhibit 2 shows the projections of Pro-Fit significant vectors on dimensions 1 and 2 of Exhibit 1. Each vector shows the direction of growth of a particular variable. The set of oriented vectors makes it possible to read the MDS configuration.

INSERT HERE EXHIBIT 1 AND 2

Dimension 1 is related to accrual information and dimension 2 to budgetary information. On the positive side of dimension 1, the greatest influence comes from the variables: v3.4 “Initial at cost of acquisition or construction”, v3.7 “Intangibles at cost less depreciation”, v3.8 “Charges of depreciation are made on a systematic and rational basis”, v3.9 “Valuation criteria”, v2.15 “Loans” and those related to depreciation v1.11, v2.21, v3.12. As can be seen, on this positive side we find the cities with the greatest accruals development in which the weight of accrual information is higher than budgetary information. They value their assets at cost minus depreciation making systematic depreciations and disclosing information about the valuation criteria, intangible assets included. This explains why Anglo-Saxon and Nordic cities are on the right of this dimension. The negative side of dimension 1 is influenced mainly by three variables -v1.6 “Balance sheet under modified accrual basis”, v1.16 “Classification of expenditures by function” and v1.17 “The expenditures are grouped by object class”. The first is related to the first steps of the introduction of accrual accounting and the other two are related to budgetary information. So, cities which present only budgetary information, or in which the budget has a relevant weight in the financial report, are

³ Polytomous Logit Universal Models.

located on the left -negative side- of this dimension. This is the case of Germanic, Eastern and some Southern European cities.

Dimension 2 is related to budgetary information, which explains why most Germanic and Eastern European cities are on its positive side and the UK cities on its negative side. The positive side of dimension 2 is related to the following items: v1.17 “The expenditures are grouped by object class”, v1.18 “The revenues are grouped by sources” v1.20 “Budgetary cash-flow statement” v1.12 “Statement of source and application of funds”, v1.9 “Account format”, and other variables such as v1.11, v2.21, v3.12, v1.9. The negative side is related to variables more connected with the development of accruals such as: v3.4 “Initial at cost of acquisition or construction”, v1.5 “Reasons for changes”, v3.7 “Intangibles at cost less depreciation”, v3.15 “Impairment”, v2.1 “Methods of providing for pension and retirements plans” and v3.9 “Valuation criteria”.

So, the cities located on the positive side of Dimensions 1 and 2 are those with dual systems in which both budgetary and accrual information is relevant. The cities located on the negative side of Dimensions 1 and 2 are those which disclose low levels of accrual and budgetary information, although they are legally obliged to include this information in the financial report. Finally, those located on the positive side of Dimension 1 and on the negative side of Dimension 2 disclose accrual accounting to a greater extent than budgetary information, and *vice versa* in those located on the negative side of Dimension 1 and on the positive side of Dimension 2.

Now we will analyse the distribution of the five groups shown in Exhibit 1, considering their public administration styles and the weight of accrual accounting in the financial reports.

Group 1 includes the British cities analyzed -eight- plus Copenhagen, Oslo, Amsterdam, Barcelona, Lisbon and Athens. This group is located on the right of Dimension 1 and, except for Oslo, presents good scores in accrual implementation. The cities of this group usually include the changes in accounting policies and information related to them, a balance sheet under full accrual basis and an operation statement with inter-period allocation (Table 1). The additional information is usually a cash flow statement, sometimes complemented with the reconciliation statement of profit and cash-flow. The financial report also includes budgetary information but it has relatively less importance than in other groups. This group provides most of the additional disclosures required by the IPSAS 1 with regard to information about property, plant and equipment (Table 3), which is a milestone in the implementation process of the accrual basis.

Group 2 includes Stockholm, the other five Spanish cities -Madrid, Valencia, Saragossa, Seville and Malaga- Turin, Dortmund, Riga, Stuttgart and Budapest. This group is on the positive side of Dimension 1 which evidences a lower degree of development of their accrual accounting systems, and most of the cities are also on the positive side of Dimension 2, which evidences a higher percentage of budgetary information. So, this group is made up of cities with dual systems: above average accrual accounting developments plus budgetary information on the cash basis. Even though these cities usually present the balance sheet under full accrual basis, there are some differences with the previous group: only two provide information about changes; only a few include the statement of accounting policies; not all provide inter-period allocations in the operation statement; and it is not frequent to find other financial statements. Information about assets is lower than in the first group; they distinguish between types of tangible assets but do not give much information about them except for their

depreciation, and only in two cases are valuation criteria disclosed. Budgetary information gains importance, being more complete than in previous group.

Group 3 includes only three cities, Marseille, Genoa and Milan. These cities have obtained good scores within the Southern public administration style, showing an above average level of accrual disclosures for their group. They are located on the negative side of Dimension 1 and Dimension 2, which reflects low disclosures in budgetary and accrual information. Although they have dual systems and they should present financial statements under the accrual basis, their effective development is still in progress: they do not present a common balance sheet; they do not include the operation statement and any other financial statements; their general concepts information is quite low and, again, not homogeneous; property, plant and equipment is disclosed but further information is not provided. They have their budgetary information in common and this is the most important information they disclose.

Group 4 includes cities which belong to Germanic and Eastern European public administration styles -fourteen. This group is located on the negative side of Dimension 1 and on the positive side of Dimension 2, which evidences a poor development of accrual accounting. As can be seen in Tables 1 to 3, this group shows lower scores than previous groups and belongs to public administration styles in which accruals are not required and not applied by cities. These cities present budgetary information and, in some cases, a balance sheet, which is often a financial assets and liabilities balance sheet. There are two cities a long way from the centre of the group, Tallinn and Lille. This is because they are the only cities in this group which include an operation statement.

Group 5 includes five Southern European cities, located on the negative side of Dimension 1: Paris, Bordeaux, Palermo, Roma and Lyon. All of them are required by

law to disclose accrual information. However, they make few accrual disclosures and, as in the previous group, most of the information disclosed is budgetary. Only Paris includes an operation statement and a cash flow statement.

5.- DISCUSSION.

Tables 1 to 3 show overwhelming evidence that the introduction of accrual accounting at local level is a widespread trend in the EU. The local governments from the countries classified by Hood (1995) as 'leaders' in the implementation of NPM postulates -the UK plus Sweden- disclose the financial statements considered as typical by the OECD and the IFAC under an accrual-based accounting system and have implemented, or are in process of considering, accrual budgets. Conversely, European Continental local governments present heterogeneity in their actual annual accounts, even between those which have adopted GPFS under the accrual basis at legal level. Notwithstanding, a formal shift along the spectrum from cash to accrual has taken place in almost all cases.

The local governments studied are adopting accrual accounting first in those areas in which accrual can be adapted more easily without incurring additional data collecting costs, such as liabilities and financial assets. By contrast, accrual accounting is being implemented more slowly in physical assets, in the operation statement and in disclosures related to retirement benefits, all of them involving a stronger break with cash accounting practices. Disclosures for property, plant and equipment show shortages, especially in valuation criteria, depreciations and other additional information to be included in the notes. Even though the information about physical assets is not costless and presents a lower degree of reliability than other accrual accounting issues, it has brought about the need to elaborate and maintain updated physical asset inventories. Before the implementation of GPFS under the accrual basis, the majority of EU Continental local governments did not have reliable updated inventories available.

The results show that EU legal dispositions about public sector accounting meet most IASB and IPSASs recommendations, but they are adapted by local government managers to their own organizational characteristics and wishes. This is reflected in the differences detected within each country between the legal accrual accounting model and the information actually provided by local governments. The size of the gap between rhetoric (legal disposition) and actual implementation also depends on the interest of central governments and audit offices in monitoring and supervising local government accounting practices and, hence, the leeway that managers have for interpreting, or even ignoring, their domestic accounting regulation. These differences in the interest of central governments and/or audit offices in the monitoring of the actual implementation of accrual accounting provide useful information to distinguish when the search for symbols of good governance prevails over the real enhancement of accountability and transparency.

Why accrual accounting is being implemented throughout EU countries, even in countries which are reluctant to 'managerialism' changes, and why this implementation shows different features and levels of compliance with the legal requirements of each country could be explained by the theories described in Section 2. Agency theory contributes partially to explaining the accrual implementation process in countries, such as the UK, where NPM reforms have stressed the introduction of private sector management techniques in local governments, and where the central government is strongly interested in its implementation at local level. Institutional and positive accounting theories contribute to better explaining the features of the accrual accounting implementation process in Southern European countries, which have been distrustful of the NPM doctrine, but not as reluctant as the Germanic countries, and have adapted rather than implemented NPM reforms to their own local government cultural and

organizational contexts. In these countries, central governments have encouraged the implementation of accrual accounting in local governments, seeking the enhancement of accountability, but local governments have seen in accrual accounting a symbol of modernity and good management. This implementation has been carried out through a mixture of mimetic institutionalism -when there is an imitation of practices implemented by other local governments with a reputation for being well managed- and coercive institutionalism -when there is a law or a legal requirement which imposes accrual accounting in local governments. The active involvement of senior managers and strong monitoring by central governments or audit offices are crucial for successful implementations. When the lack of interest of managers and weak monitoring, convert local governments into passive adopters, the institutional theory decoupling concept (Meyer and Scott, 1992) appears, which predicts the gap between legal dispositions and actual implementation observed in Tables 1 to 3. Given the weakness of citizen monitoring of local governments and the little interest shown by some EU central governments in the fulfillment of legal accounting requirements, managers have room to decide how to apply the accounting rules, providing more information on those issues whose measurement and recognition can be carried out without additional work or material costs, e.g. monetary issues, and less on issues related to physical assets and depreciations, where they find more difficulties in collecting and maintaining the required information updated.

In EU cities, cash or modified cash basis budgets and accrual basis GPFS coexist in a dual or single -depending on the degree of integration- public sector accounting system. Against the dual models, it is pointed out that they cause confusion for managers, who receive conflicting signals from the two parallel sets of accounting numbers (Guthrie, 1998), and that accrual accounting information will be of little real importance in dual

systems IFAC (PSC, 2002). Notwithstanding, in European Continental countries, the Euro-zone has *in fact* imposed dual systems based on the accrual requirements of the national accounting. In order to measure the organizational deficit and indebtedness, according to European System of National and Regional Accounts (ESA 95) requirements, i.e. on the accrual basis, governments have to carry out adjustments in their budget figures. So, the daily decision-making of managers is taken on cash basis budgetary information which provides information about compliance with legality, but the measurement of the financial results of their managerial action is established according to the ESA 95 accrual basis criteria. Thus, the financial needs and the surplus or deficit which are crucial milestones for the monitoring authority to assess the financial health of the entity, are established on similar accrual basis as the GPFS⁴.

In this framework, accrual accounting becomes crucial for head officers involved in the planning of short and long-term economic activity and not for those who merely administer but not planning or manage the appropriations assigned. The disclosure of GPFS provides information not included in the budgetary systems, such as physical assets and their changes between periods, the level and composition of debts and financial assets, changes in equity and the correlation between expenses and resources, which otherwise would not have been disclosed or would not have been so visible. The adoption of GPFS on accrual basis, even in dual systems, represents a real contribution to the planning and management within organizations, without a substantial increase in the consumption of scarce resources.

European countries are implementing the accrual basis, adapted to their own organizational context and administrative culture. In the UK, the usefulness for the

⁴ At present the IFAC, IMF and UN, are working together to reduce the discrepancies between their three accrual accounting systems.

decision-making of managers is emphasized, while Southern European countries focus the accounting change on accrual based GPFS for the improvement of accountability and transparency and, hence, the search for legitimacy. The Nordic group, once again, presents combined results between the Anglo-Saxon and Southern European. The dual model is also prevalent in Nordic countries although accruals are more deeply implemented than in Southern European countries. Germanic and Eastern countries are at the moment in the early stages of accrual basis implementation.

6. CONCLUSIONS

Why accrual accounting is spreading more and more throughout developed and developing countries is a question with no straightforward answer. EU countries are introducing accrual accounting into local governments for external purposes, in almost all cases through dual systems, seeking a similar role for accrual accounting in the public sector as it has in the business sector: the disclosure of financial information “that is useful for economic decision-making by a broad range of users who are not in a position to demand reports tailored to meet their particular information needs”⁵, -i.e. external users. Institutional theory contributes to explaining the change towards accrual accounting in terms of the quest for symbols of legitimacy for local governments, and public choice and agency theories contribute to explaining the same change from the need for external control over public sector managers. Managers are considered in the IASB, FASB and GASB conceptual frameworks as preparers of GPFS and not as primary users who rely on GPFS as their major source of financial information.

Even though accrual accounting initiatives have sometimes been viewed with suspicion by some scholars and practitioners, it is a fact that, for the last two decades, accrual

⁵.IASB’s Exposure Draft: International Financial Reporting Standard for Small and Medium-Sized Entities (IFRS for SMEs) par 2.1

accounting has been adopted by more and more OECD countries in all public organization tiers and in all types of public administration styles. This study has sought to measure the degree of accrual implementation in EU local government accounting systems and it has also tried to give an answer to the question of why the accrual accounting change has overcome the resistance to other NPM reforms in countries relatively suspicious of them. The reason for the speed and successful trajectory of GPFS on the accrual basis partially lies in that dual systems do not require the introduction of deep organizational changes and answer the demands of XXI century citizens for higher responsiveness, transparency and accountability, while traditional budgetary statements are maintained for monitoring compliance with legality and for specific decision-making purposes. Furthermore, in Euro-countries, the disclosure of information on the accrual basis contributes to facilitating the monitoring of the fulfilment of deficit and borrowing restrictions imposed on the public sector by the Treaty of Maastricht.

The comparison between EU local governments carried out in this study shows that accrual accounting in the UK and some Nordic cities, coexists with changes towards market-oriented management styles, whereas, in the European Continental countries, it is overlapped with their bureaucratic public management systems. This finding is consistent with our initial hypothesis that accrual accounting should not be viewed only as a means for improving managerial decision-making processes, but as a goal to enhance financial transparency and accountability and as a symbol of XXI century governance. The search for symbols of legitimacy and new governance styles, together with its usefulness for financial and service delivery planning, at least in Euro zone countries, could explain the successful trajectory of accrual accounting. EU countries

have adopted, or will shortly adopt, accrual accounting as the basis for the disclosure of GPFS. There is no evidence of this trend reversing.

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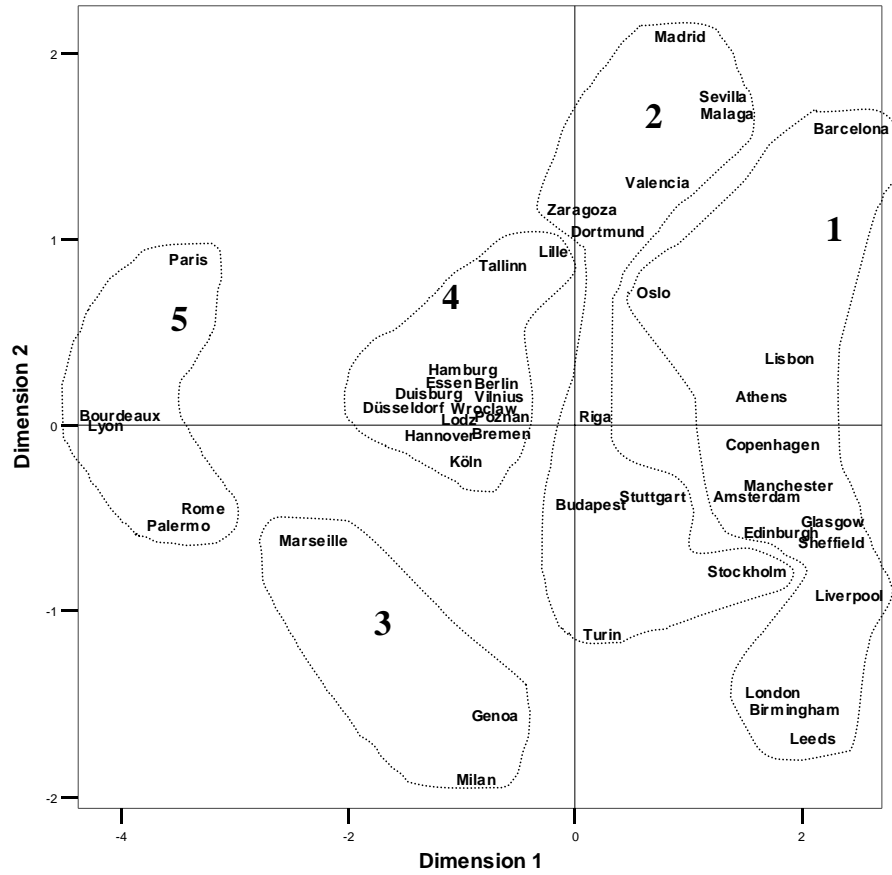
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Table 4 **Mann-Whitney Test for GPFS items**

Mann-Whitney Test^{a,b}	Anglo/ Nordic	Anglo/ South	Anglo/ Germanic	Anglo/ East	Nordic/ South	Nordic/ Germanic	Nordic/ East	South/ Germanic	South/ East	Germanic/ East
Level of coincidence Table 2	0.056	0.013	0.000	0.001	0.336	0.001	0.008	0.000	0.021	0.304
Level of coincidence Table 3	0.010	0.000	0.000	0.001	0.004	0.001	0.005	0.001	0.299	0.088

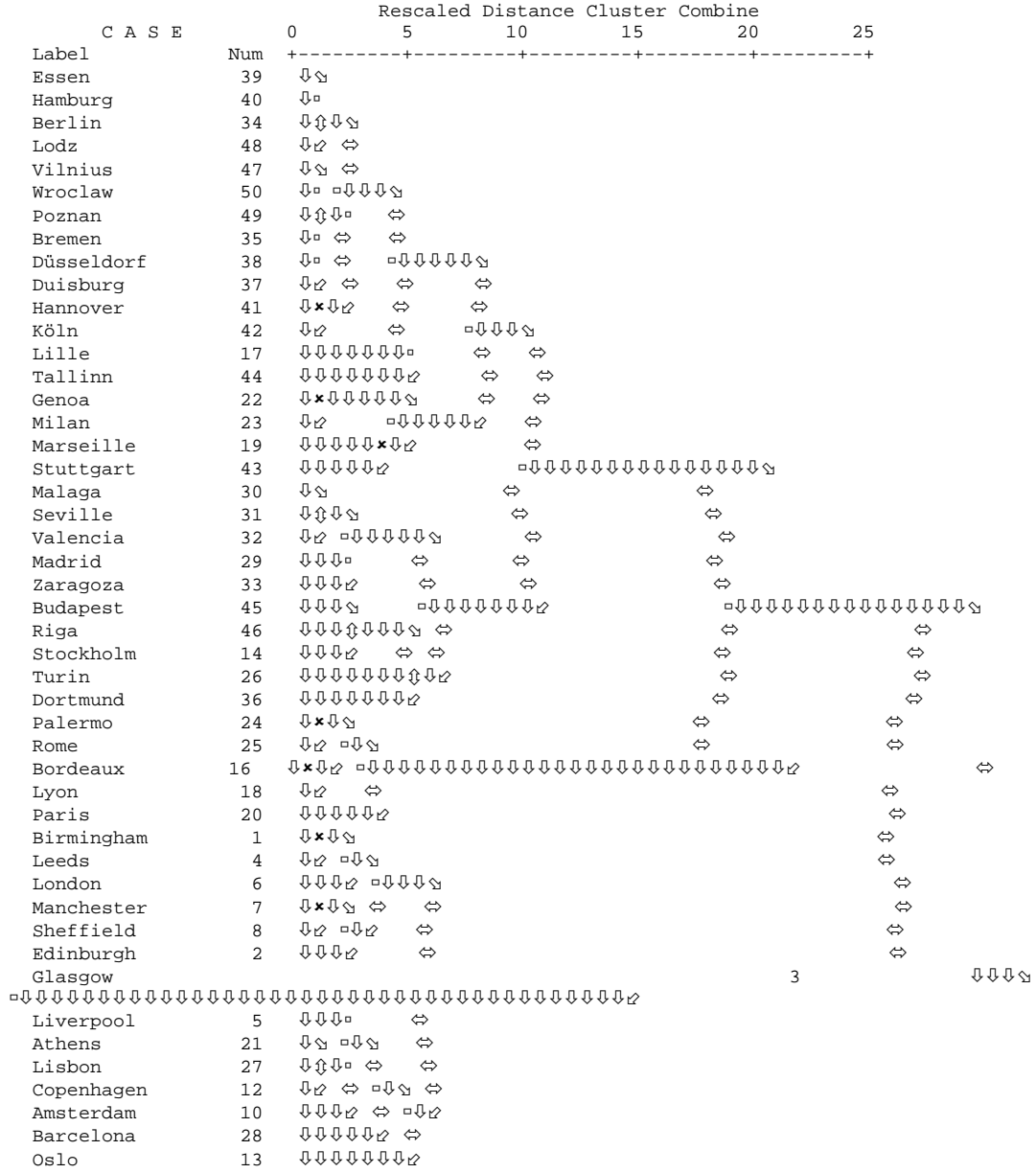
a. p value or Asym. Significance for Mann-Whitney test, b. if p value < 0.05, the groups differ

Exhibit 1: MDS results. Projection onto Dimensions 1 and 2⁶.



⁶ Three cities are considered as missing data, Dublin, Helsinki and Brussels, because we do not have information about their legislation for the information included in Table 3 about “information is disclosed on”. Wien was excluded from this analysis as we have not found information about the legislation applicable.

Appendix 1: Cluster Dendrogram



Appendix 2: Pro-Fit Analysis. Results of the ordinal regression.

	Dim 1	Dim 2	Dim 3	Dim 4	Dim 5	Dim 6	R*	Dim 1	Dim 2	Dim 3	Dim 4	Dim 5	Dim 6	R*	
v1.1	1.083	-0.537	0.384	0.272	1.153	0.668	0.570	v2.13	1,587	-0,641	-1,513	-2,791	-4,155	-1,552	0,821
	<i>0.26733</i>	<i>0.388</i>	<i>0.470</i>	<i>0.448</i>	<i>0.5183</i>	<i>0.552</i>		<i>0.43633</i>	<i>0.556</i>	<i>0.7653</i>	<i>0.92533</i>	<i>1.19533</i>	<i>0.931</i>		
v1.2	0.986	0.005	-0.694	1.425	-0.781	0.351	0.536	v2.14	14,946	-5,491	-2,454	-6,090	-12,092	-1,208	1
	<i>0.25133</i>	<i>0.406</i>	<i>0.421</i>	<i>0.53033</i>	<i>0.481</i>	<i>0.514</i>		<i>8,456</i>	<i>3,411</i>	<i>2,128</i>	<i>4,911</i>	<i>6,876</i>	<i>3,420</i>		
v1.3	1.771	-1.163	0.239	3.772	-3.110	2.803	0.841	v2.15	3,409	-0,694	-3,739	-0,495	-0,035	1,622	0,865
	<i>0.52233</i>	<i>0.5543</i>	<i>0.540</i>	<i>1.11233</i>	<i>1.06433</i>	<i>0.91133</i>		<i>1,6253</i>	<i>0,782</i>	<i>1,6993</i>	<i>0,741</i>	<i>0,633</i>	<i>1,158</i>		
v1.4	0.916	-0.965	-0.237	1.319	-0.911	2.408	0.673	v2.16	0.174	-2.015	1.956	-0.808	0.177	-0.044	0.618
	<i>0.27833</i>	<i>0.4343</i>	<i>0.453</i>	<i>0.6643</i>	<i>0.622</i>	<i>0.71733</i>		<i>0,212</i>	<i>0,54633</i>	<i>0,56333</i>	<i>0,521</i>	<i>0,506</i>	<i>0,549</i>		
v1.5	2.245	-2.176	0.209	3.690	-3.819	4.393	0.883	v2.17	9.122	-22.111	3.895	-1.317	-6.247	-11.778	1
	<i>0.83033</i>	<i>0.8643</i>	<i>0.615</i>	<i>1.39933</i>	<i>1.46033</i>	<i>1.44033</i>		<i>4,706</i>	<i>11,3013</i>	<i>4,192</i>	<i>5,332</i>	<i>3,205</i>	<i>7,551</i>		
v1.6	-0.485	-2.595	-0.045	0.324	-0.296	-1.457	0.607	v2.18	2.904	-1.225	-4.311	-0.578	-2.434	-0.885	0.921
	<i>0.302</i>	<i>0.711</i>	<i>0.478</i>	<i>0.726</i>	<i>0.669</i>	<i>0.748</i>		<i>0,77633</i>	<i>0,925</i>	<i>1,60633</i>	<i>0,737</i>	<i>1,0463</i>	<i>0,960</i>		
v1.7	2.637	2.166	-0.743	-0.838	-1.945	2.280	0.874	v2.19	2.054	-0.550	0.770	-0.127	3.094	0.572	0.772
	<i>0.63133</i>	<i>0.64933</i>	<i>0.539</i>	<i>0.575</i>	<i>0.65533</i>	<i>0.9893</i>		<i>0,567</i>	<i>0,503</i>	<i>0,644</i>	<i>0,705</i>	<i>0,99433</i>	<i>0,774</i>		
v1.8	-0.356	0.245	-0.540	1.000	1.251	0.075	0.281	v2.20	7.206	3.493	6.087	4.533	-0.987	-7.234	1
	<i>0.291</i>	<i>0.524</i>	<i>0.597</i>	<i>0.771</i>	<i>0.732</i>	<i>0.874</i>		<i>3,384</i>	<i>2,588</i>	<i>3,728</i>	<i>3,633</i>	<i>3,597</i>	<i>5,288</i>		
v1.9	1.455	2.337	1.434	1.020	-0.110	-0.825	0.780	v2.21	3.414	2.661	0.389	-0.242	0.223	-0.691	0.908
	<i>0.34633</i>	<i>0.57933</i>	<i>0.5653</i>	<i>0.503</i>	<i>0.519</i>	<i>0.601</i>		<i>0,81533</i>	<i>0,67133</i>	<i>0,561</i>	<i>0,572</i>	<i>0,561</i>	<i>0,751</i>		
v1.10	0.981	-1.297	2.619	0.050	-0.985	-0.505	0.670	v2.22	3.790	-0.248	2.215	4.038	-0.502	-9.747	1
	<i>0.3843</i>	<i>0.719</i>	<i>1.0633</i>	<i>0.485</i>	<i>0.756</i>	<i>0.622</i>		<i>1,23333</i>	<i>0,738</i>	<i>0,9043</i>	<i>1,6643</i>	<i>0,797</i>	<i>2,91133</i>		
v1.11	3.414	2.661	0.389	-0.242	0.223	-0.691	0.908	v2.23	4.271	3.546	3.644	2.603	0.689	-7.496	1
	<i>0.81533</i>	<i>0.67133</i>	<i>0.561</i>	<i>0.572</i>	<i>0.561</i>	<i>0.751</i>		<i>1,576</i>	<i>1,461</i>	<i>1,764</i>	<i>2,126</i>	<i>1,754</i>	<i>3,410</i>		
v1.12	-0.007	3.575	-0.399	0.643	1.303	-0.018	0.615	v2.24	4.722	6.621	-2.272	11.691	-3.210	-3.846	1
	<i>1.601</i>	<i>3.389</i>	<i>1.291</i>	<i>1.706</i>	<i>2.507</i>	<i>2.117</i>		<i>2,485</i>	<i>3,740</i>	<i>2,514</i>	<i>5,901</i>	<i>2,495</i>	<i>3,013</i>		
v1.13	0.811	-1.109	1.394	0.584	-0.331	-0.162	0.543	v2.25	4.722	6.621	-2.272	11.691	-3.210	-3.846	1
	<i>0.28733</i>	<i>0.5143</i>	<i>0.6053</i>	<i>0.518</i>	<i>0.605</i>	<i>0.580</i>		<i>2,485</i>	<i>3,740</i>	<i>2,514</i>	<i>5,901</i>	<i>2,495</i>	<i>3,013</i>		
v1.14	16.194	-38.156	12.484	-30.218	6.328	-15.772	1	v3.1	5.069	-1.945	-2.934	1.231	5.893	2.207	1
	<i>23776.431</i>	<i>17476.867</i>	<i>42317.937</i>	<i>0.000</i>	<i>31385.134</i>	<i>0.000</i>		<i>1,768</i>	<i>1,617</i>	<i>1,531</i>	<i>2,609</i>	<i>2,417</i>	<i>2,081</i>		
v1.15	0.446	-1.138	0.485	-0.691	0.462	-1.291	0.383	v3.2	0.967	-0.480	-2.083	-2.121	-1.350	-1.771	0.682
	<i>0.277</i>	<i>0.5343</i>	<i>0.576</i>	<i>0.552</i>	<i>0.556</i>	<i>0.700</i>		<i>0,27633</i>	<i>0,464</i>	<i>0,64133</i>	<i>0,73333</i>	<i>0,6423</i>	<i>0,8483</i>		
v1.16	0.137	0.404	-0.232	-2.623	-1.138	-0.086	0.512	v3.3	4.617	-2.330	-6.937	0.760	7.422	-2.780	1
	<i>0.165</i>	<i>0.336</i>	<i>0.367</i>	<i>0.66433</i>	<i>0.4743</i>	<i>0.521</i>		<i>2,487</i>	<i>2,356</i>	<i>3,337</i>	<i>4,198</i>	<i>4,234</i>	<i>4,301</i>		
v1.17	-0.319	1.074	-2.570	1.335	1.143	0.142	0.586	v3.4	5.532	-4.929	7.270	-3.027	-0.879	-2.772	0.931
	<i>0.211</i>	<i>0.574</i>	<i>0.80033</i>	<i>0.5943</i>	<i>0.5653</i>	<i>0.567</i>		<i>2,2123</i>	<i>1,85333</i>	<i>2,66533</i>	<i>1,701</i>	<i>1,089</i>	<i>3,215</i>		
v1.18	-0.373	0.891	-1.325	-0.893	0.397	-1.288	0.470	v3.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	<i>0.222</i>	<i>0.4493</i>	<i>0.530</i>	<i>0.545</i>	<i>0.540</i>	<i>0.6043</i>									
v1.19	1.268	-1.809	1.322	-1.389	1.374	0.252	0.699	v3.6	29.661	-20.296	28.734	-1.776	7.840	-15.720	1
	<i>0.42633</i>	<i>0.69033</i>	<i>0.755</i>	<i>0.6763</i>	<i>0.887</i>	<i>0.693</i>		<i>13809.696</i>	<i>0,000</i>	<i>14331,218</i>	<i>0,000</i>	<i>19810,516</i>	<i>18381,888</i>		
v1.20	0.663	2.434	-0.902	0.364	0.611	-0.046	0.622	v3.7	0.715	0.628	0.103	-1.881	-1.078	-1.203	0.524
	<i>0.21833</i>	<i>0.63933</i>	<i>0.501</i>	<i>0.481</i>	<i>0.474</i>	<i>0.551</i>		<i>0,21833</i>	<i>0,358</i>	<i>0,402</i>	<i>0,61833</i>	<i>0,5353</i>	<i>0,5843</i>		
v1.21	0.360	0.201	1.174	-0.611	0.527	0.126	0.257	v3.8	4.535	-0.765	5.060	-1.231	0.265	-0.192	0.927
	<i>0.198</i>	<i>0.356</i>	<i>0.465</i>	<i>0.494</i>	<i>0.491</i>	<i>0.536</i>		<i>1,62833</i>	<i>0,810</i>	<i>2,0073</i>	<i>0,839</i>	<i>1,142</i>	<i>0,870</i>		
v2.1	1.467	-1.466	0.680	-0.412	0.536	-0.082	0.691	v3.9	3.456	-1.407	3.393	0.422	0.955	3.072	0.894
	<i>0.54733</i>	<i>0.6873</i>	<i>0.687</i>	<i>0.702</i>	<i>0.632</i>	<i>0.687</i>		<i>1,142</i>	<i>0,787</i>	<i>1,3483</i>	<i>0,638</i>	<i>0,622</i>	<i>1,2673</i>		
v2.2	0.962	-0.934	-0.326	0.308	1.144	0.665	0.554	v3.10	2.948	0.045	3.363	-0.838	2.306	5.245	0.900
	<i>0.24733</i>	<i>0.3973</i>	<i>0.433</i>	<i>0.476</i>	<i>0.516</i>	<i>0.531</i>		<i>0,93333</i>	<i>0,595</i>	<i>1,11533</i>	<i>0,725</i>	<i>0,9173</i>	<i>1,77933</i>		
v2.3	-0.268	0.004	-0.928	0.779	-2.064	-0.001	0.384	v3.11	0.807	0.172	1.278	0.406	0.927	2.001	0.587
	<i>0.229</i>	<i>0.389</i>	<i>0.499</i>	<i>0.478</i>	<i>0.66933</i>	<i>0.545</i>		<i>0,23933</i>	<i>0,372</i>	<i>0,47433</i>	<i>0,504</i>	<i>0,497</i>	<i>0,66333</i>		
v2.4	5.069	-1.945	-2.934	1.231	5.893	2.207	1	v3.12	3.414	2.661	0.389	-0.242	0.223	-0.691	0.908
	<i>1.768</i>	<i>1.617</i>	<i>1.531</i>	<i>2.609</i>	<i>2.417</i>	<i>2.081</i>		<i>0,81533</i>	<i>0,67133</i>	<i>0,561</i>	<i>0,572</i>	<i>0,561</i>	<i>0,751</i>		
v2.5	5.069	-1.945	-2.934	1.231	5.893	2.207	1	v3.13	3.626	8.339	1.597	-5.692	-0.178	2.861	1
	<i>1.768</i>	<i>1.617</i>	<i>1.531</i>	<i>2.609</i>	<i>2.417</i>	<i>2.081</i>		<i>1,40533</i>	<i>2,88533</i>	<i>1,001</i>	<i>2,20133</i>	<i>0,830</i>	<i>1,1693</i>		
v2.6	4.617	-2.330	-6.937	0.760	7.422	-2.780	1	v3.14	42.076	-17.095	65.362	-13.264	-37.777	0.755	1
	<i>2.487</i>	<i>2.356</i>	<i>3.337</i>	<i>4.198</i>	<i>4.234</i>	<i>4.301</i>		<i>10259,447</i>	<i>9832,393</i>	<i>0,000</i>	<i>8770,628</i>	<i>7842,010</i>	<i>5826,001</i>		
v2.7	3.626	8.339	1.597	-5.692	-0.178	2.861	1	v3.15	1.200	-1.338	1.082	-0.074	-0.995	-0.104	0.668
	<i>1.405</i>	<i>2.885</i>	<i>1.001</i>	<i>2.201</i>	<i>0.830</i>	<i>1.169</i>		<i>0,29633</i>	<i>0,49733</i>	<i>0,5073</i>	<i>0,514</i>	<i>0,568</i>	<i>0,529</i>		
v2.8	4.584	-0.590	-7.361	-2.954	2.074	-2.957	1	v3.16	1.812	-0.730	0.943	-0.064	0.368	0.975	0.786
	<i>1.684</i>	<i>1.554</i>	<i>3.240</i>	<i>1.547</i>	<i>1.518</i>	<i>1.988</i>		<i>0,40533</i>	<i>0,511</i>	<i>0,589</i>	<i>0,614</i>	<i>0,539</i>	<i>0,681</i>		
v2.9	2.746	-2.609	0.832	-1.565	-0.576	-2.420	0.812	v3.17	3.542	-1.747	1.936	1.762	-0.976	3.766	0.914
	<i>0.78933</i>	<i>0.80433</i>	<i>0.5483</i>	<i>0.800</i>	<i>0.6473</i>	<i>1.077</i>		<i>1,13133</i>	<i>0,819</i>	<i>1,073</i>	<i>0,7983</i>	<i>0,734</i>	<i>1,43533</i>		
v2.10	0.967	-0.480	-2.083	-2.121	-1.350	-1.771	0.682	v3.18	0.088	-0.207	-0.944	1.072	-0.786	1.014	0.311
	<i>0.27633</i>	<i>0.464</i>	<i>0.64133</i>	<i>0.73333</i>	<i>0.6423</i>	<i>0.8483</i>		<i>0,183</i>	<i>0,366</i>	<i>0,438</i>	<i>0,558</</i>				

ⁱ When applying the MDS with SPSS-14, the value of the *Stress of Kruskal* in six dimensions (the maximum allowed by SPSS) is 0.055, which is considered by Kruskal (1964) as between “good” and “acceptable”.

[ⁱⁱ] In the MDS analysis, the value of of the *Stress of Kruskal* in six dimensions was 0.121, which could be described as “fair” (Kruskal, 1964). To visualize the map, it is necessary to work with projections of the map onto pairs of dimensions. Exhibit 1 shows the projection of the map onto dimension 1 and dimension 2.