**WELFARE REGIME, WELFARE PILLAR AND SOUTHERN EUROPE**

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**Abstract**

This paper uses a variety of methods of statistical cluster analysis to examine how EU countries (other than the new East European members) are grouped. Using the four dimensions, family, market vs state, religion and clientelism, the results of the analysis are that Southern European/Mediterranean (SE/M) countries form a distinct cluster that, both in its existence and in its difference from the conservative cluster, contradicts the notion of “three worlds of welfare capitalism”. Other results include that Ireland, though not geographically contiguous, falls into the SE/M grouping.

**Keywords**

**Welfare regime; welfare pillar; Southern Europe; cluster analysis; Ireland**

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**1 Introduction**

There has been an ongoing debate about Esping-Andersen’s (1990) classification of countries into welfare regimes ever since the publication of his seminal book, *Three Worlds of Welfare Capitalism* (*TWWC*). One group of contributors to this debate have disagreed with Esping-Andersen, arguing both that the Southern European/Mediterranean (SE/M) countries are substantially different from those in the conservative welfare regime and that they are similar to each other, in other words that they constitute a distinct, fourth welfare regime. This debate continues to attract the attention of academics. Among many recent journal articles addressing aspects of this question are Gal (2010), Ferragina and Seeleib-Kaiser (2011), Powell and Barrientos (2011), and Minas et al. (2013a; 2013b).

The current paper also addresses the issue. Using statistical cluster analysis, on a range of measures of national attitudes, structures and performance, the paper examines the question whether the conservative welfare regime should include the SE/M countries. The question, in other words, is whether there are two welfare regimes, a conservative one, and an SE/M one. A second question follows from this. If the analysis of the data supports the case for a differentiation between the SE/M and the conservative regimes, the question then becomes which of the two regimes best fits Esping-Andersen’s definitions. A third question is whether the SE/M and conservative clusters are more similar to one another than either is to the social democratic cluster, as would be expected from Esping-Andersen’s (1990) grouping together of Southern European countries with the conservative countries.

The paper is structured with a literature review following this introduction. The next section is on the methodology, with descriptions of the data and of the methods used to analyse the data. A section on results follows and the final two sections are devoted to discussion and conclusion respectively.

**2 Literature Review**

Esping-Andersen’s (1990) *TWWC* is seminal in the comparative welfare state literature. It provides a justification for clustering welfare states into regime types where “regime” is the “systematically interwoven… complex of legal and organizational features” in the “relation between state and economy” (p.2). The justification is that the “welfare state variations we find are… not linearly distributed, but clustered by regime-types” (p.26). The result is a categorisation of countries into three types of welfare state, or three welfare regimes, liberal, social democratic, and conservative.

The three pillars through which welfare services are provided are the state, the market and the family. Although all three are mentioned by Esping-Andersen (1990), only the state and the market are subject to analysis in the book. The welfare regimes are thus defined primarily in terms of the relative importance of, and relationships between, state and market, as reflected mainly in people’s ability to survive without working, or de-commodification (Esping-Andersen, 1990). The greatest level of de-commodification is in the social democratic, the least in the liberal welfare regime. The conservative is somewhere in between.

Should Southern Europe be included in the third, conservative welfare regime? Differences between Esping-Andersen and others have generated a great number of papers. His focus on family in his later work is to some extent a response to this literature, though as will be shown he continues to argue that the SE/M countries are of the conservative welfare regime type.

Many writers, from a variety of perspectives, have argued that an additional regime or regimes should be added to Esping-Andersen’s three. Barlow and Duncan (1994), Ferrera (1996), Castles and Ferrera (1996) and Bonoli (1997), among many others, all provided evidence, using various methodologies, to show that the SE/M should be an additional welfare regime. A key factor in this is the importance of the family pillar in welfare provision in the SE/M countries.

In response to the focus on family among his critics, Esping-Andersen seems to revise his analytical framework in various ways. In a 1995 working paper, for example, he begins to pay more attention to the family and “familialism”. And in this paper he does distinguish between Germany “(as the leading and most comprehensive exponent of the social insurance approach), and Italy (as an example of a less complete and unusually ‘familialistic’ welfare state)” (Esping-Andersen, 1995, p.1). The paper thus expresses the tension between, on the one hand, including Southern European countries within the conservative welfare regime type and, on the other, differentiating them from that type.

Esping-Andersen (1997) further expresses this tension when he includes himself among those who have questioned, on the basis of religion and familialism, the appropriateness of considering Southern Europe as an additional regime type. In the context of a discussion about various arguments as to why Southern Europe might be considered to be a welfare regime type in addition to his original three, he writes: “others (including myself) point to the Catholic imprint and familialism” (1997, p.180).

By the end of the decade, Esping-Andersen’s (1999) analytical framework has undergone significant change. Wincott (2001) shows that, in *Social Foundations of Postindustrial Capitalism* (*SFPC*), Esping-Andersen admits to errors in his earlier approach. In *SFPC*, for example, Esping-Andersen acknowledges that “his approach [in *TWWC*] was too narrowly focused on income maintenance… and… that he concentrated too much on a state-market duality and failed to take account of households and families” (Wincott, 2001, p.411).

This change in approach is reflected in a different focus in the identification of the three types of welfare regime. In the introduction to *SFPC*, in the context of a discussion about the crisis of the welfare state, Esping-Andersen (1999) states that the composite parts that together form the contemporary welfare regime are:

labour markets, the family, and, as a third partner, the welfare *state*. We should not forget that the sum-total of societal welfare derives from how inputs from these three institutions are combined. Some regimes, in particular the liberal, Anglo-Saxon, are market-biased; others, especially the Southern European or the Japanese, are powerfully familialistic. And still others put the accent on state delivery of welfare (pp.4-5).

In an interview with Esping-Andersen, published in 2000, this apparent change in focus in relation to the determination of regime-types is confirmed. Asking about types of welfare regime, the interviewer suggests that Esping-Andersen seems to “stick to the three-fold model… first proposed in *Three Worlds*.” In a cross between a question and a statement, he adds: “In the Scandinavian model the state takes the lead, in the Liberal model it is the market and in the Continental one it is familialism which is crucial?” Esping-Andersen’s response is in the affirmative: “That is why I find it hard to imagine four or more *distinct* models because principally there are only three institutions relevant to and capable of welfare production. Some add the third sector [the voluntary and community sector] but no society can function with this as the dominant welfare producer” (Esping-Andersen, 2000, p.762).

The change in focus is from labour de-commodification through state provision of welfare, in the social insurance/pension area, as a key factor in welfare regime typing, to dominant welfare pillar as the key factor in welfare regime typing. This change will be used below in an argument about the nature of the three main welfare regimes. It should be noted, however, that Powell and Barrientos (2011, p.74) disagree with this, arguing that “the development of the analysis and the changes to the formulation of the welfare regime framework [in *SFPC*] do not have implications for the clustering observed in the earlier book.”

De-commodification remains important for Esping-Andersen (1999) in *SFPC*, but now applied in the context of family – and particularly women – in relation to the labour market. It is related to “de-familialisation”, which refers to the entry of women into the labour market. In a sense, de-commodification is possible for women only after de-familialisation; female labour has to be commodified before it can be de-commodified.

Despite the ambiguities arising from the new importance of familialism in his work in the 1990s, in more recent papers he continues to posit the same trichotomy of worlds, the social democratic (Scandinavian), the liberal welfare (American), and the conservative, corporatist (Continental European) (e.g. Esping-Andersen, 2003). Accepting the importance of family, yet insisting on the original three worlds, has generated further criticism for Esping-Andersen.

One analyst who has been important in arguing that the SE/M constitutes an additional welfare regime is Allen (2006). She focuses mainly on what she calls the “missing family” (2006, p.257) in Esping-Andersen (1990). She shows that the type of clientelism and patronage discussed by Ferrara (1996) as characteristic of the SE/M is closely related to the extended family. The clientelist system, she writes, “allows extended families to derive revenue through access to the state and means that family-based support networks offer an alternative to widening the range and scope of the welfare state” (Allen, 2006, p.267). She also associates this relationship between the extended family and the clientelist system with patriarchy: “patronage reinforces patriarchal power relations within families because access is mediated through the male heads of extended families” (Allen, 2006, p.268).

Allen’s (2006) approach is in some ways similar to Esping-Andersen (1999) in *SFPC*. There (in *SFPC*)he also emphasises male dominance and sees familialism as a reflection of a less developed social system. The difference between Allen (2006) and Esping-Andersen (1999) is that where he continues to focus on the family within the household, she focuses on the extended family. As she puts it, the data (from Eurostat) used to compare countries in Europe “conceptualize families as a subset of households, in contrast to the more common view in southern Europe, which sees households as component parts of a wider, extended family” (Allen, 2006, p.255).

Among others who see the SE/M countries as different from the conservative welfare regime, Kääriäinen and Lehtonen (2006) use data from the ISSP (International Social Survey Programme) to compare and cluster countries on the basis of a series of social behaviours like having meals together, providing help in time of need, visiting friends and relatives, etc. They use mean scores and confidence intervals in a number of indicators of social capital, and find that the SE/M countries emerge as different, with high scores for all family-related activities. In this, family refers to extended family, in the sense of a variety of relatives in different households.

Böhnke (2008) uses data from the European Quality of Life Survey (EQLS) in a variety of regression models to explore whether the social integration of the poor is significantly different in different clusters of European countries. The SE/M emerges as distinct from the others, and in particular from the other Continental countries, because of the much greater importance of extended family. She concludes that: “The Mediterranean European countries represent a cluster, which also includes Malta and Cyprus. The regimes in this region are characterised by the extreme importance they attribute to family cohesion and intergenerational solidarity, and by an only rudimentary provision of social benefits [by the state]” (Böhnke, 2008, p.136).

Gal (2010), arguing on the basis of contrasting bar charts, similarly finds family to be important. He adds Israel and Turkey to the European SE/M countries and concludes that three themes are important in differentiating these countries from other welfare states: religion, family and clientelism. Like Allen (2006), Kääriäinen and Lehtonen (2006) and Böhnke (2008), Gal is explicit about family in this context being the extended family, not just the nuclear family.

In a contribution to the Eurostat Methodologies and Working Paper series, Iacovou and Skew (2010) argue that a variety of family-related variables, rather than strictly defined welfare regime types, can be used to cluster countries. This raises the “ideal” type versus “real” type argument (see in particular, Powell and Barrientos, 2011). However, the argument of Aspalter (2011) is accepted here, namely that real typical and ideal typical comparisons are not substitutes but complements; both are necessary. Using principal components analysis in an empirically clustering framework, Iacovou and Skew (2010) show that with family variables, Cyprus, Spain, Greece, Italy and Portugal clearly emerge as separate from the other EU countries. (Malta is excluded because of absence of data.)

Using some techniques also used in this paper – hierarchical and K-means clustering – with policy variables, Castles and Obinger (2008) show that if the SE/M countries are a separate grouping they are decreasingly so: “…families of nations have, if anything, become more distinct with the passage of time, with only the diminishing distinctiveness of continental and Southern European outcomes patterns suggestive of a blurring of cluster boundaries…” (p.339). While for the 1960s and 1970s Southern Europe emerges in their dendogram (Fig. 1) as a separate cluster, for the early 2000s their dendogram (Fig. 2) is much more congruent with Esping-Andersen’s (1990) three worlds.

Esping-Andersen (1990; 1999) is not alone in the “three worlds” camp. Guillen and Alvarez (2001), for example, reject the argument that the SE/M countries constitute a separate welfare regime. They accept that there are differences between the SE/M and the conservative countries, particularly in relation to familialism, but argue that these are insufficient to justify differentiation as a fourth welfare regime.

Because of different approaches, different variables and different time periods, there is no consensus as to whether the SE/M countries are part of, or separate from, the conservative group of European countries. The absence of consensus suggests a continuing need to find ways of determining whether or not the SE/M countries belong with the conservative countries in the same welfare regime type. In the next section of the paper the statistical methods to be used are described. Here it remains to summarise the choice of issues on which to focus in the differentiation between regime types.

The factors contributing to why the SE/M should be differentiated from the conservative welfare regime are broadly agreed upon by most analysts. They include in particular family as an important welfare pillar – and, by implication, a lower penetration of the state in welfare provision – and relative significance of religion (e.g. Ferrara, 1996). Gal (2010) concurs with Ferrara (1996) and Allen (2006) that clientelism is also present to a greater extent in the SE/M countries than elsewhere. The literature review thus suggests that the data required to test whether and to what extent the SE/M countries are a separate welfare regime, should provide measures of the four dimensions, family, state vs market, religion and clientelism.

**3 Methodology**

**3.1 Data description**

To undertake the type of analysis required to cluster countries into groups, the first requirement is to select the countries to be included, and the second is to determine the variables to be used in the clustering process. The selection of countries for this paper follows from the key aim of the paper, namely to consider whether the SE/M countries constitute a different grouping from the conservative European countries. To test this, the SE/M and the conservative European countries both had to be included. The focus is on Europe and for reasons of data availability and consistency it was decided to limit the selection to EU countries and to use mainly Eurostat data so the prototypical liberal country, the USA, is excluded, as well as non-EU countries like Switzerland, usually considered to be in the conservative group, and Israel and Turkey among SE/M countries. Given the focus on SE/M and the conservative regime countries, there was also no need to include new East European EU members.

At best, however, this would help to determine which countries should be included in which group.[[1]](#endnote-1) It is possible that as a result of the analysis, the differences between the SE/M grouping and the conservative grouping would be small, smaller for example than the difference/distance between either of these groups and the social democratic group. This could lead to the conclusion that although different from each other, the SE/M and conservative European countries are similar enough to be included in the same welfare regime type. To answer the question of relative differences it was necessary to include countries known to be in a different group from either the SE/M or the conservative countries. Given the decision to limit the study to EU members, this meant the inclusion of the Scandinavian countries. The final list of countries in the study is shown in Table 1.

The dimensions to be used, in a sense as criteria for determining the cluster into which each of the countries should fall, follow from the literature. The conclusion from the review of the literature above is that there are four dimensions important for present purposes: family, state vs market, religion and clientelism.

**Table 1: Countries included in the study classified according to Esping-Andersen (1990, Table 2.2)**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Welfare Regimes*** | | | |
| ***Conservative*** | ***Social Democratic*** | ***Liberal*** | ***Unclassified*** |
| Finland | Austria | United Kingdom | Cyprus |
| France | Belgium | Ireland | Greece |
| Germany | Netherlands |  | Luxembourg |
| Italy | Denmark |  | Malta |
|  | Sweden |  | Portugal |
|  |  |  | Spain |

The variables chosen as indicative of family[[2]](#endnote-2) were People per Household and Age of Leaving Home, for men and women (all from Eurostat, [www.eurostat.eu](http://www.eurostat.eu)). The values of each of these variables should increase as the importance of family in society increases.

For state vs market the variables chosen were Expenditure on Social Protection as a percentage of GDP (ESP/GDP), and General Government Contributions to Receipts of Social Protection Schemes as a percentage of GDP (GGC/GDP)[[3]](#endnote-3) (from Eurostat). The logic is that the greater the values of these variables, the greater the importance of the state in the provision of welfare.

In relation to religion, no data are gathered or presented by Eurostat. There are other sources, including the World Values Survey ([www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)) and the European Social Survey ([www.europeansocialsurvey.org](http://www.europeansocialsurvey.org)). Unfortunately data could not be obtained from either of these sources that were complete for all our countries or reasonably up to date. ESS data on Frequency of Attendance at Religious Services were used, with figures for missing countries imputed using data for other years.

On clientelism, too, data are not available from Eurostat. Clientelism is in general difficult to measure, but the *Eurobarometer Corruption Report* (2011) provides data on the extent to which corruption is believed to exist, in general in each country, and in business, and this is a reasonable proxy for clientelism. Support for perception of corruption as a proxy for clientelism is provided by Singer (2009). He demonstrates that if clientelism is the provision by politicians of goods or services in return for political support, and if corruption is the exploitation of public office for private gain, then, using data for 88 countries, “clientelism is… associated [among other things] with the level of corruption experienced by businesses in their interactions with government officials who set policy and distribute contracts” (p.1). Others using and justifying perception of corruption as a proxy for clientelism include Treisman (2007) and Keefer (2007).

For most variables the most recent year available is 2010 or 2011. For Age Leaving Home, because of changes in definitions the most recent year available is 2007. Table 2 provides a summary of the dimensions, variables and sources.

**Table 2: Dimensions, variables and sources**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Dimension*** | ***Variables*** | ***Source*** | ***Year*** |
| Family | People per Household | Eurostat | 2011 |
|  | Age Leaving Home (Male)a | Eurostat | 2007 |
|  | Age Leaving Home (Female)a | Eurostat | 2007 |
| State vs Market | Expenditure on Social Protection as % of GDP (ESP/GDP) | Eurostat | 2010 |
| General Government Contributions to Receipts of Social Protection Schemes as % of GDP (GGC/GDP) | Eurostat | 2010 |
| Religion | Attendance at Religious Service at least Once a Week | ESS | 2010c |
| Clientelism | Perception of Corruption as Part of Business Cultureb | Eurobarometer | 2011 |
|  | Perception of Corruption as Major Problemb | Eurobarometer | 2011 |

a In the analysis that follows, the Age Leaving Home is the average of the Males and Females.

b In the analysis that follows, the Corruption Perception is the average of the two corruption perception percentages, as part of business culture and as a major problem in the country.

c The 2010 values for Austria, Italy, Luxembourg and Malta are imputed based on the 2002 values using linear regression imputation (R2=93.7%).

**3.2 Analytical techniques**

The main statistical technique is cluster analysis. It is used to classify the statistical observations – in our case countries – into clusters on the basis of the relevant dimensions. The goal is to have countries within each cluster that are more similar to each other than to countries in other clusters. Three cluster analysis methods are used, hierarchal cluster analysis (HCA), K-means and partitioning around medoids (PAM). They are applied to the data sequentially in order to test the robustness of the clusters. If the clusters are stable – involving the same countries in the clusters – despite the application of different statistical cluster techniques, then the results can be considered to be robust. HCA and K-means have been widely used in the welfare regime literature in recent years (Gough, 2001; Saint-Arnaud and Bernard, 2003; Powell and Barrientos, 2004; Wood and Gough, 2006; Bambra, 2007; Abu Sharkh and Gough 2010; Stoy, 2012). No examples of the use of PAM in the welfare regime literature have been found and therefore both in the use of PAM and in the sequential use of all three cluster techniques, this paper is original. The results generated are also original. Ways of presenting the results, in particular Figures 2, 3 and 4, are also new to the welfare regime literature.

The HCA algorithm starts with each country separate in its own distinct cluster, and at each level recursively merges the pair of clusters with the minimum dissimilarity into a single cluster. At the final level there is only one cluster containing all the countries. A visual representation of the HCA method is provided in the solution’s dendrogram, which summarizes the cluster combinations in each step with a relative distance scale. The dendrogram is a helpful tool for determining the appropriate number of clusters, something that is partly judgmental and partly based on theoretical background. K-means and PAM methods require *a priori* specification of the desired number of clusters, something that might need additional analysis. In our case, the number of clusters considered is either two or three, based on the theory emerging from the literature review. Both of the algorithms start with an initial assignment of the countries into clusters; at each iteration every country is reassigned to the cluster with the closest cluster centre, and the iterations continue until the assignments do not change. With the appropriate number of clusters, K-means and PAM methods are more flexible and powerful than HCA since they permit reclassification of a country into a different cluster in each iteration. The main difference between the K-means and PAM methods is that in the case of PAM the cluster centres, called medoids, are actual data points, i.e. countries, that minimize the distances from the rest of the data points in the cluster; in the case of K-means the cluster centres are the mean values of the cluster data points. PAM is also flexible in the choice of the dissimilarity measure, something that K-means lacks, since the latter algorithm is appropriate only when the dissimilarity measure is the squared Euclidean distance.

All the variables used in the analysis are interval variables and they are first standardized. Euclidean distance is a suitable dissimilarity measure for this data since there are no extreme outliers in any of the variables, and therefore it is used in all of the methods. In the case of HCA the objective function used for choosing the pair of clusters to merge at each level is the Ward’s minimum within cluster variance. Ward’s method is also used in Saint-Arnaud and Bernard (2003), Powell and Barrientos (2004) and Castles and Obinger (2008), among others.

Statistical cluster analysis is a descriptive tool with no underlying assumptions. Pictorial representations of the results of cluster analysis, in addition to the dendogram of HCA, include the scatter plot of the two principal components of the data and pairwise scatter plots of the variables used. Having identified the clusters it is then necessary to test the dissimilarity of each variable between the clusters. The Kruskal-Wallis rank sum test identifies whether there are significant differences in the distributions between the clusters of each of the variables. It is the non-parametric equivalent of the one-way Anova test. The Wilcoxon-Mann-Whitney (WMW) rank sum test compares, for each pair of clusters, the distribution of the variables. It is the non-parametric equivalent of the two independent sample t-test. The WMW thus provides a multiple comparison of variable distributions for cluster pairs. In the case of three clusters, in order to test whether the cluster distances differ for different pairs of clusters, the WMW test is applied on the set of all the Euclidian distances (using the array of the six variables shown in Table 2) between the countries of the two clusters in each pair of clusters. Probability density estimation – with kernel smoothing – is used for a graphical representation of the distributions of these distances for each pair of clusters. The analysis is performed in R, which has very flexible graphical solutions and a built-in routine for the PAM method.

**4 Results**

Using six variables from the four dimensions of interest, Age Leaving Home, People per Household, Corruption Perception, Religious Attendance, Expenditure on Social Protection as a percentage of GDP (ESP/GDP), and General Government Contributions to Receipts of Social Protection Schemes as a percentage of GDP (GGC/GDP), Figure 1 is the dendogram produced by HCA using the Ward method. The lengths of the vertical lines represent the dissimilarity of the clusters. HCA starts with each country in a distinct cluster and merges clusters sequential until all countries are clustered together. Depending on the specified number of clusters the dendrogram is partitioned into main branches. The three solid line rectangles show the apportioning of the countries in the case of three final clusters, and the dotted line rectangles show the case of two final clusters.

**Figure 1: HCA Dendrogram based on six variables from the four dimensions, with two and three cluster indication.**



In the case of three final clusters, all methods used, HCA, K-means and PAM, cluster the countries identically, with the SE/M and Ireland in one group, the social democratic countries in another group and the remaining, conservative countries in a third group. In Figure 2, using the two principal components of the six variables (explaining 82.04 per cent of the variability in the data), the countries are presented with each ellipse representing a cluster.

Part of the output of the PAM method is the medoid of each cluster, that is, the country whose average dissimilarity (Euclidean distance) to all the other countries in the cluster is minimal. Therefore, the medoids can be considered as the central countries of each cluster. As demonstrated in Table 3, Belgium is the medoid for the conservative cluster, Portugal for the SE/M cluster and

**Figure 2: Principal Components Plot, based on six variables from the four dimensions, with three clusters, from all methods**

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Sweden for the social democratic cluster. The countries in each cluster are listed in order of their distance from the corresponding medoid based on the standardized values of each variable.

**Table 3: Distance of each country from the corresponding cluster medoid**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Cluster*** | | | | | | | |
| ***Conservative*** | |  | ***SE/M*** | |  | ***Social Democratic*** | |
| ***Country*** | ***Distance*** |  | ***Country*** | ***Distance*** |  | ***Country*** | ***Distance*** |
| **BE** | **medoid** |  | **PT** | **medoid** |  | **SE** | **Medoid** |
| **AT** | **0.76** |  | **CY** | **1.45** |  | **FI** | **0.85** |
| **UK** | **0.93** |  | **IT** | **1.45** |  | **DK** | **2.27** |
| **FR** | **1.10** |  | **ES** | **1.54** |  |  |  |
| **DE** | **1.28** |  | **EL** | **1.65** |  |  |  |
| **NL** | **1.85** |  | **IE** | **1.98** |  |  |  |
| **LU** | **2.39** |  | **MT** | **2.41** |  |  |  |

The scatter plots of the six variables in Figure 3 show that the SE/M countries tend to have higher values than the other countries, followed by the conservative countries and then the social democratic, for all the variables except the two state vs market variables (ESP/GDP and GGC/GDP). Furthermore, all the variables except the two variables of the state vs market dimension, generally separate the clusters well.

**Figure 3: Pairwise Scatter Plots of the variables with cluster indication**

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Table 4 provides the cluster medians for each of the variables. The Kruskal-Wallis rank sum test identifies whether there are significant differences in the distributions between the clusters of each of the variables. All of the variables have a significantly different distribution in at least one of the clusters (p-value < 0.05), and are therefore strong variables in terms of cluster separation. The variables are ranked based on their discrimination power, with Age Leaving Home being the most powerful variable.

The Wilcoxon-Mann-Whitney rank sum test compares, for each pair of clusters, the distribution of the variables. The WMW provides a multiple comparison of variable distributions for the three cluster pairs. It shows that for Age Leaving Home, Religious Attendance and People per Household the distribution in each cluster is significantly different (at the 5 per cent level) from the others. In the case of Corruption Perception, conservative and social democratic clusters do not have significantly different distribution. For ESP/GDP the conservative cluster is not significantly different from the social democratic one. Finally, for GGC/GDP, the Southern European/Mediterranean is not significantly different from either of the other two clusters.

**Table 4: Comparison of the three clusters using the six variables’ cluster medians with Kruskal-Wallis and Wilcoxon-Mann-Witney rank sum tests**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | *Cluster Medians* | | |  | *Kruskal-Wallis Test* | |  | *WMW p-values* | | |
| *Variable* |  | *Cons.* | *SE/M* | *SD* |  | *Chi-Sq (df 2)* | *p-value* |  | *Cons.  vs SE/M* | *Cons.  vs SD* | *SE/M  vs SD* |
| Age Leaving Home |  | 23.85 | 28.25 | 20.60 |  | 13.742 | 0.001 |  | 0.001 | 0.017 | 0.017 |
| Religious Attendance |  | 10.70 | 26.90 | 3.60 |  | 13.007 | 0.001 |  | 0.001 | 0.025 | 0.017 |
| People per Household |  | 2.30 | 2.70 | 2.10 |  | 12.617 | 0.002 |  | 0.003 | 0.05 | 0.008 |
| Corruption Perception |  | 67.50 | 88.00 | 36.00 |  | 12.471 | 0.002 |  | 0.001 | 0.158 | 0.017 |
| ESP/GDP |  | 30.35 | 26.98 | 30.56 |  | 7.593 | 0.022 |  | 0.038 | 0.517 | 0.017 |
| GGC/GDP |  | 10.93 | 12.70 | 16.73 |  | 6.741 | 0.034 |  | 0.318 | 0.017 | 0.067 |

Considering the six variables simultaneously as an array, the distances between countries or central points are the Euclidian distances of the arrays. Table 5 summarizes the distance between the clusters’ central points that can be considered to be either the cluster medoids, or the medians or the means. For any type of central point (medoid, median or mean), the distance between the conservative and social democratic cluster is the smallest, followed by the distance between the conservative and SE/M, with the distance between the SE/M and the social democratic being the largest.

**Table 5: Distance between Cluster Central Points**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Distance between** | | |
| ***Cluster Pair*** | ***Medoids*** | ***Medians*** | ***Means*** |
| *Cons. vs SD* | 2.887 (BE – SE) | 2.469 | 2.780 |
| *Cons. vs SE/M* | 2.873 (BE – PT) | 2.767 | 2.872 |
| *SE/M vs SD* | 5.043 (PT – SE) | 4.607 | 4.949 |

To further investigate the distances between the three clusters, all the country distances were calculated for each pair of clusters, resulting in 49 distances between the seven conservative and the seven SE/M countries, 21 between the seven conservative and the three social democratic countries, and 21 between the seven SE/M and the three social democratic countries.

The result of the application of the WMW rank sum test to the three samples of distances is that the SE/M to the social democratic distance is significantly different from the distance of the SE/M to conservative, and the distance of the conservative from each of the other two clusters is not significantly different. However, the observed trend indicates that the distance between the conservative and the SE/M is larger than the distance between the conservative and the social democratic.

This observed trend is further supported when the countries are separated into only two clusters. All of the clustering methods merge the conservative and the social democratic countries into one cluster, with the SE/M countries in another cluster as demonstrated in Figure 1. Furthermore, according to the WMW test, all the variables except GGC/GDP are distributed differently in each of the two clusters.

Given the importance of the family dimension, both in the evolution of the work of Esping-Andersen, and in the justifications for the separation of the SE/M from the conservative countries in the literature in general, it is of interest to repeat the statistical analyses undertaken above, but with only family variables. The clustering methods are applied using two variables of the family dimension, with two and three clusters specified in order to identify how similar the SE/M countries are to each other and how different from the rest. Specifically, the variables are Age Leaving Home, and People per Household. The results, using all three clustering methods, with both two clusters and with three clusters, are identical to those where all four dimensions are used in the analysis. The same countries are clustered into each of the three groupings, with the same indications in relation to distances between them.

**5 Discussion**

The results strongly confirm the argument drawn from the literature review, namely that the SE/M countries are similar enough to one another, and different enough from the conservative countries, to constitute a grouping separate from the conservative countries. Two quite different sets of data were used. In the first case six variables reflecting the four dimensions used in all three clustering methods produce identical results. These results confirm the view that the SE/M – with Ireland – is a separate cluster, with the appropriate non-parametric tests proving that the cluster is significantly different from the other two clusters. It is, moreover, more different from the conservative cluster than the conservative is from the social democratic.

In the second case, when only the family dimension is used in the clustering exercise, the SE/M grouping of Portugal, Greece, Italy, Spain, Cyprus and Malta, joined by Ireland, again emerges as a separate cluster. Also, it is again more different from either of the other two clusters – the social democratic and conservative groupings – than they are from each other.

If we define welfare regimes on the basis of welfare pillar, as Esping-Andersen (1999) does in *SFPC*, then the SE/M countries are more obviously the familialistic welfare regime, with the main welfare provider being the family. If so, then the peripheral countries should be seen as one of the three basic regime types and the conservative group, represented primarily by Germany, should be seen as the additional, fourth type. Future research might focus on the SE/M as the family-pillar, familialistic regime, the Scandinavian countries as the state-pillar social democratic regime, and the US and similar countries as the market-pillar liberal regime. The fourth, conservative type is to some extent in between the other three, with more state pillar than the liberal regime and familialistic regimes, less family and less market than the liberal regime, and so on, as shown in Figure 4.

**Figure 4: New typology of welfare states**



Among the unusual or unexpected results from the statistical clustering is that Ireland falls into the SE/M, or peripheral country, cluster. Ferragina and Seeleib-Kaiser (2011) find only one other study, of 19 reviewed, that clusters Ireland with the SE/M countries. This one study, moreover, is Obinger and Wagschal (2001), and its findings on Ireland are at best ambiguous; they undertake cluster analyses for three time periods, and Ireland falls into a different cluster in each of the three (and is the only country of the 21 in their study that does so). In any case, given that the focus year in the present study is 2011, post-Celtic Tiger, the SE/M classification is not surprising. During the Celtic Tiger period of rapid growth Ireland moved simultaneously “towards European neo-corporatism and Anglo-American neo-liberalism” (Boucher and Collins, 2003 p.295). In 2010 Ireland obtained a bailout from the Troika and in so doing joined Greece and Portugal. Ireland is generally more like the SE/M countries in terms of clientelism and religion; now the state vs market, and many macroeconomic variables, are more similar to those of the Southern European countries and the ambiguity of its position between the conservative and liberal regimes has been resolved by greater similarity with the SE/M countries. By 2013 Greece, Portugal and Ireland had been joined by Spain and Cyprus among the bailout countries.

Another finding that is arguably unexpected is that the UK is classified as among the conservative countries. In the vast majority (78 per cent) of studies reviewed by Ferragina and Seeleib-Kaiser (2011) the UK is liberal; in only one study is it classified as conservative (Christian democratic). However, confidence in the UK’s classification as conservative is enhanced by the fact that the UK is near the middle of the conservative cluster in the dendogram in Figure 1, and that the distance from the UK to Belgium, the conservative cluster medoid, is less than that of either France or Germany (see Table 1). Considering the focus of the paper on the SE/M countries and the exclusion of the prototypical liberal country, the USA, the omission of the UK may have been appropriate. Omitting the UK makes no difference at all to any of the other results. Moreover, given that more than half the studies reviewed by Ferragina and Seeleib-Kaiser (2011) put Ireland and the UK together among the liberal countries, makes the findings on these two countries in the present study all the more interesting.

A third finding that is unusual in the present study is that the conservative and social democratic clusters are more similar to one another than either is to the SE/M. Saint-Arnaud and Bernard (2003, p.512), for example, find that the conservative countries (Belgium, France, Germany and Austria) are more similar to the “Latin countries” (Spain, Italy, Greece and Portugal) than either regime is to any other regime. They point out that their result is consistent with Esping-Andersen (1999). The SE/M finding in the present study is of course in direct contrast to either *TWWC* or *SFPC*.

**6 Conclusion**

The first question addressed in this paper is whether SE/M should be considered a separate welfare regime. The results of the analysis strongly suggest they should. In this the paper is simply an additional one in a long stream of papers making the same argument. However, the paper provides original evidence, and applies techniques not used before in this literature, to support the argument. Also new to the literature is the answer to the second question, namely that the SE/M should be considered not only separate from the conservative welfare regime but also in some sense more primary than the conservative welfare regime. If the welfare regimes reflect the three welfare pillars, each regime supported mainly by a different pillar, then it follows from analyses in this paper that the family pillar is strongest in the SE/M countries and that therefore the SE/M is one of the first three worlds. The conservative welfare regime, and not the SE/M, should then be considered the fourth. This argument is enhanced by the finding on the third question, that the difference (distance) between the SE/M and the conservative cluster is greater than that between the conservative and the social democratic cluster.

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1. It is of course possible that the analysis might suggest that the countries should be grouped into three or more clusters. [↑](#endnote-ref-1)
2. These suffer the same constraint as pointed out by Allen (2006), namely that they are indicative of intra-household family, not inter-household family. [↑](#endnote-ref-2)
3. Full definition for ESP/GDP: “Expenditure on social protection as % of GDP, 2010. Expenditure on social protection contains: social benefits, which consist of transfers, in cash or in kind, to households and individuals to relieve them of the burden of a defined set of risks or needs; administration costs, which represent the costs charged to the scheme for its management and administration; other expenditure, which consists of miscellaneous expenditure by social protection schemes (payment of property income and other)” (Eurostat).

   Full definition for GGC/GDP: “General government contributions to receipts of social protection schemes as % of GDP, 2010. Receipts of social protection schemes comprise social contributions, general government contributions and other receipts. Employers' social contributions are the costs incurred by employers to secure entitlement to social benefits for their employees, former employees and their dependants. Employers' social contributions may be actual or imputed; they can be paid by resident or non-resident employers” (Eurostat). [↑](#endnote-ref-3)