QUANTIFY TRUST IN THE EUROPEAN COUNTRIES

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Abstract
The concept of social capital may be approached from a variety of disciplines such as sociology, political science, economics, etc. Definitions of social capital use terms like networks, trust and shared action. The object of this work is to move towards a quantification of social capital and, more specifically, in finding a suitable proxy variable, because measuring social capital is difficult since there are no tangible elements that might aid identification in order to carry out an exact measurement. This study focuses on just one of the recurrent features of these definitions, "Trust". In order to do this, a principal components analysis (PCA's) is carried out to clarify the relationships that exist between the different measures of this variable.
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1. Introduction

The concept of social capital may be approached from a variety of disciplines such as sociology, political science and economics. However, given that it has only been the subject of empirical investigation for approximately the last ten years it tends to elude an all-embracing definition. Nevertheless most disciplines use the terms networks, trust and shared action in their descriptions of social capital.

Historically, the first definition of what is now thought of as social capital is normally attributed to Hanifan in the year 1916[i]. The concept subsequently disappeared from the literature for various decades, and it was not until the end of the 1970's that the term regained a place within scientific research. From this time onward, "social capital" has been cited frequently in a variety of scientific fields: Pierre Bourdieu used the words in 1985 linked to the concept of "construction of the social space" and he said "the active properties that are selected as principles of construction of the social space are the different kinds of power or capital that are current in the different fields." It is not until the work of James Coleman (1988) in the field of educational sociology and that of Robert Putnam (1993) in political sciences however, that the expression "social capital" becomes more firmly established academically.

In recent years, the concept has come to form an integral part of the lexicon of many areas of research, including sociology, politics, and economics, the discipline with which this

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article deals. The ideas put forward by Putnam (1993) suggest that social capital is a means by which democracy is strengthened, whilst other authors such as Fukuyama (1995) argue that social capital favours the creation of business wealth which arises through the networks generated by firms. Both authors coincide in attributing the generation of social capital to networks and in confidence in civil society, features that contribute to a more efficient democracy and more innovative economies. The inclusion of this concept within economics has given rise to the idea of a new factor of production. Authors such as Neira, Vázquez, Portela (2009), Helliwell (2000), Stephen Knack and Philip Keefer (1997), Whitely (2000) try to explain the growth in a group of countries within the OEDC by broadening the production function to take in this particular socio-economic component.

In most of the studies that look at social capital, one of the main variables used is trust (Knack and Keefer, (1997); Whitely, (2000); Beugelsdijk and Schaik, (2001); Helliwell (1996)). The variable usually includes different types of trust or confidence, ranging from confidence in members of the family, neighbours, the people of one's country, etc. A second commonly included variable is one that measures participation in different associations in an attempt to measure levels of social integration within communities (Helliwell, (1996); Berger-Schmitt, 2002; Knack and Keefer, (1997); and Beugelsdijk and Schaik, (2001)). In addition to these, others are often included such as levels of corruption, democracy, crime rates, divorce, levels of unemployment, etc.

In spite of the fact that the concept of social capital is now widely accepted among researchers and has been used in empirical growth models, there is still much debate as to whether it is a form of capital in the strictest of senses in same way as physical, natural and human capital. All types of capital are conceived of as different kinds of assets that create advantages and make productive processes more efficient. In this sense, social capital constitutes the accumulation of various kinds of assets, assets that may be social, psychological, cultural, cognitive, institutional etc. and which increase the likelihood or the amount of cooperative behavior which is mutually beneficial for those involved and for society in general.

However, some authors such as Arrow[ii], Robert Solow[iii], Pérez et al[iv] criticize the juxtaposition of the words "social" and "capital" i.e. they argue that social capital is not really a form of capital at all. Similarly, certain authors consider that elevating social relations to the status of capital is tantamount to rewarding the "economic imperialism" prevalent in companies today, that is, everything is measured purely in terms of economics. "To talk of social relations as "capital", for example, is not sociological heresy or a sell out to economics: it simply reflects the reality that our social relationships are one of the ways in which we cope with uncertainty (returning to our family when we lose our job), extend our interests (using alumni networks to secure a good job), and achieve outcomes we could not attain on our own (organizing a parade)." (Woolcock & Narayan, 2000).

The object of this work is to move towards a quantification of social capital and, more specifically, in finding a suitable proxy variable. After demarcating the term social capital, definitions from different areas such as economics, sociology and politics are held up to the light. This study focuses on just one of the recurrent features of these definitions, "Trust". In order to do this, a principal components analysis (PCA's) is carried out to clarify the relationships that exist between the different measures of confidence.

2. Typology and manifestations of social capital

As was shown in the introduction, the term social capital has come to the fore via different areas, and has thus attained different definitions. Bourdieu (1986, page 248) describes it as "the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition".

Coleman, on the other hand, states that all definitions, "consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure" (Coleman, 1988, page S98)

Finally, one of the most important exponents of the idea of social capital defines it as follows: "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam R. , 1995, pp. 67)

Social capital is a resource in which other resources may intervene in the expectation of obtaining future benefits or profits, and may be a substitute or a compliment of other resources. As a substitute, agents may compensate for the lack of financial or human capital by establishing good relations[v]. Social capital is also complementary to other forms of capital and is not, of itself, sufficient to generate development. Further, as is the case for both physical and human capital, social capital must be maintained in that social relations must be renewed or confirmed periodically in order to assure their efficacy. In addition, like human capital, social capital does not have a reliable index of depreciation since it tends to improve with usage and deteriorates rapidly in disuse. Although social capital is not the property of any one individual it has the feature of apropriability, that is, in parallel with physical capital it may be employed for specific purposes, it may be used by an agent within the network for his ends (information, advice, etc.). It may also be converted into other forms of capital, but it should be pointed out that its convertibility is lower than economic capital (it may be transformed into physical, human or cultural capital with relative ease). Finally, as with all forms of capital, it expresses a relationship in terms of trust and civic cooperation.

Table 1

CLASSIFICATION OF THE STOCK OF SOCIAL CAPITAL ACCORDING TO AREA

	TYPE	CHARACTERISTICS
AREA	Individual	Network of useful relationships that a person possesses
	Business	Relationships that provide competitive advantages
	Community	Relationships between individuals that make up networks or social groups
	Public	Relationships between state organisations and economic and social agents

Source: Own elaboration

While social capital is similar to other forms of capital in various ways it also has certain features which make it different. Social capital is more difficult to find, distinguish and measure than other forms of capital. Further, it much more difficult to build social capital through a process of external intervention since it needs a social infrastructure that operates efficiently together with wide scale knowledge of local practices. It may be affirmed therefore, that social capital is the result of a process of dynamic interaction: it is created, maintained and destroyed (intentionally or not) and requires constant investment.

It is not easy to establish a typology for social capital for the reasons given above and because the term itself is still in its infancy in certain scientific fields. There are numerous classifications of social capital, depending on the author studied. Table 1 provides a classification of the different types of social capital.

3. Measures of social capital

Measuring social capital is difficult since there are no tangible elements that might aid identification in order to carry out an exact measurement. The quantification process therefore must be realised by the help of proxy variables, in line with procedures carried out for human capital. However, there is still no consensus as to which are the best variables to use in order to capture the effect of social capital on economic growth. The indicator of social confidence has been used in numerous studies as an approximation of the level of social capital. Certain authors argue that this usage is simply because there appears to be an imperative to find an indicator which is a “rapid” proxy for social capital. A further issue lies in the intrinsic nature of human capital, that is, there is a tacit assumption that social capital is a function of the community itself and hence the measures are the product of an aggregation of individual responses. However, numerous authors have pointed out that collective social capital must be more than simply the sum of individual units of social capital. (Portes and Landot, (1996); NIDS, (1997); Glaeser, (2002))

Further, and given that the definitions of social capital are set out using multidimensional terms, that is, it has its roots in sociology, the political sciences etc. it is not possible to find an unvarying and universal entity to define and social capital. Among the various reasons that are often laid out for the impossibility of finding a single measure for social capital are the following: first, the concept itself is still immature. This has led to tensions within the world of academia which is divided between those that are anxious to apply the available measures immediately, and the remainder who prefer to explore other channels in order to obtain a deeper understanding of the idea itself. Second, the term is non-lineal. This means that there must be models which are more flexible and multidimensional. Third, there is a lack of data. This deficiency is already being addressed by new designs of survey which propose novel ways of measuring social capital and which should produce more accurate indicators.

Since social capital is multidimensional, and each of these dimensions is open to different interpretations, it is important that the relevant analysis does not simply attempt to assess how much social capital there is. Rather, changes must be described in qualitative terms. “For example, within a given country the stock of social capital might have become more formal but less bridging, more bridging but less intensive, or more intensive but less public-regarding”. Putnam (2004, p. 12)

Further, a distinction must be drawn between the flow and the stock of human capital. The former helps to measure what has occurred over time, that is, it allows the analyst to discover whether or not social capital has increased or has been destroyed in a given society; the latter helps to determine the factors that indicate either a high or a low level of social capital at any given moment. This facilitates the comparison of the statistics that reflect social capital for each of the different regions. Both dimensions must be considered when it comes to carrying out a study of the level of social capital, and neither of the two is more important than the other (Spellerberg, 2001).

4. Trust: a review of the pertinent literature

The idea of constructing a synthetic indicator must involve narrowing the definition of social capital, a somewhat thorny problem for economists, particularly since the field is rather dense and one in which sociologists and political analysts have juggled with numerous hypotheses and theories for some time.

The definitions of social capital all involve two fundamental factors, trust and social networks. However, from theoretical speculation to the search for a working indicator is a complex manoeuvre. Whitely, in his empirical study on economic growth, highlights these limitations within the ideas of Putnam on capital social, but takes this definition as a starting point; "*features of social organization, such as trust, norms and networks, that can improve the efficiency of society by facilitating co-ordinated actions*" (Putnam, Leonardi, & Nanetti, 1993, p. 167). "*Unfortunately, this definition mixes up three distinct concepts: citizen´s feeling of trust in other members of society, social norms supportive of co-operation and networks of civic engagement. The first two are psychological phenomena, whereas the latter is a behavioural relationship between individuals, moulded by the institutions in which they live*" (Whitely, 2000, p. 447)

Putnam also affirms that, empirically, social confidence (horizontal confidence) and political confidence (vertical confidence) might be correlated, but are theoretically different. Confidence in the government might be a cause or a consequence of social confidence, but it is not the same term. "Generalized reciprocity is a community asset, but generalized gullibility is not. Trustworthiness, not simple trust, is the key ingredient" "*Across individuals across countries, and across time, social and political trust are, in fact correlated, but social scientists are very far from agreement about why. Some believe that a native disposition to credulity explains both. Some believe that they are influenced by the same thing – prosperity, government performance, or whatever. Some believe that one leads to the other through a complicated chain of causation; for example perhaps low social trust leads to political conflict which lowers governmental performance which reduces trust in government*" (Putnam R. D., 2000, pp. 136)

In the same line, Misztal sustains that the combination of formal norms using informal methods of execution constitutes a more efficient form of generating cooperation in modern societies ... only those legal regulations that make the assumption that there is a relationship of confidence between legislators and citizens are essential to democratic cooperation (Misztal, 2001, pp. 275). The idea that he sets out in his analysis is that, in spite of the difficult balance between the generation of confidence in formal and democracies, when the social changes that generate new forms of cooperation and confidence are also taken into consideration.

The loss of social capital which may be observed in many developed countries, has been the object of many analyses. In his book, Bowling Alone, Putnam (2000) analyses the decline of American social capital. Other authors such as Rothstein, B (2001), analyze the reduction in social capital in Sweden, which is related to a fall in the number of social networks. This idea of networks as generating social capital is a concept set out by Putnam. The growing interest on the part of other researchers is paradoxical, given that it coincides with a perceived decline in social capital in developed societies. This is a phenomenon which is explained by the sociologist Miztal, B. "*The current deficit of trust, which attracts the increasing attention of social scientists, is seen as stemming from the combination of many different factors : more critical, sophisticated and disillusioned citizens, more opaque institutional norms and less trustworthy politicians.*" (Misztal, 2001, pp. 372). There have been some analyses based upon the correlations of the trust variables and in the principal components study. Whitely (2000), based on WVS, uses a combination of three factors which are reflected in the WVS 90-93 as a measure of confidence. The underlying hypothesis is that generalized confidence comes from the externalities generated from individual confidence. By using principal components analysis an indicator of confidence is defined which conforms to the following relation: Trust=0.523 (confidence in family members) + 0.632 (confidence in fellow citizens) + 0.215 (confidence in people in general). Said indicator is used in growth models as a synthetic measure of social capital since, although it is generalized confidence that contributes to economic growth, this may be influenced by other types of confidence.

Rothstein, B (2001)[vi] proposes an analysis using Swedish WVS data in which he studies the different element of confidence taking as a starting point the general hypothesis which underlies social capital studies i.e. "*being an active member of voluntary organizations and having a large number of informal social contacts tends to raise the level of confidence in the society*". Rothstein carries out the analysis of correlations in which the strongest correlation is found to be that which exists between horizontal confidence and the institutions of public order i.e. the courts and the police. Rothstein reaches the conclusion that confidence might be more closely related to political institutions and how they work if these are a source of social capital rather than with other society's factors. These results contradict the generally held tenets social capital theory.

The study carried out by Bjornskov et al (2000) contains a principal components analysis in order to try to demonstrate that the type of political system operating in a country determines levels of social capital. In order to do this the authors start with a group of countries from Western Europe, and, via the analysis attempt to streamline the confidence variables by dividing them into the legal system, the police, the public administration and the government and splitting these into two components. The first of these refers to honesty and confidence in one's fellow citizens and institutions, and the second is linked to civic participation.

5. An empirical analysis for the EU

Data from World Values Surveys (WVS) provides information relevant to a wide range of cultural, political and social areas. The survey provides answers to questions arising in the fields of social relations, politics and technology. The survey reveals how certain criteria impact upon the society i.e. the groups and associations to which individuals belong, religious beliefs and behaviour, attitudes with respect to certain kinds of behaviour, employment, the national and world economy, confidence in various types of civil organisation etc. It also includes demographic information relevant to household incomes, the number of residents in each household, age, sex, social class, political affiliation etc of those interviewed.

This work uses the four surveys available in World Value Surveys (WVS) (1981, 1990, 1995 and 1999)[vii]. The accumulation of individual frequencies was used to obtain an aggregate value for each country for certain values analyzed in the survey[viii]. This data reflects the percentage of individuals from each country that feel that the following are important or trust them: generalized (TRUST)[ix], the armed forces (ARME), the legal system (LEGAL), the police (POL), parliament (PAL), public administration (CIVIC) and belonging to groups (GROUP).

A principal components analysis was carried out in order to try to reduce the number of variables considered and to obtain synthetic indicators for them which allow the analysis to uncover possible relations and those dimensions that they have in common.

Three components are obtained from the analysis and these jointly explain 86.22% of total variance. Table 2 contains the matrix of correlations between the original variables and the principal components.

Table 2 Principal components analysis

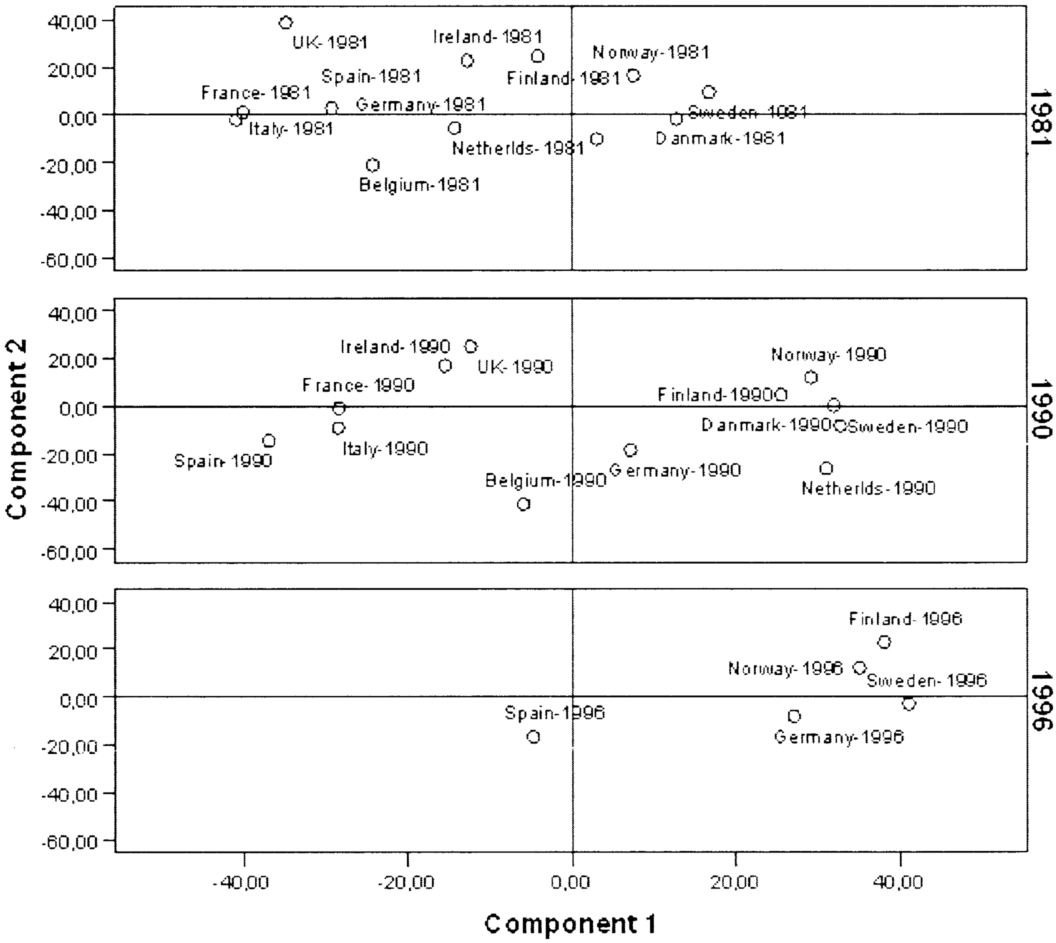
	Component		
	1	2	3
ARME	,019	,934	,038
CIV	,144	,320	,638
GRUP	,983	-,053	-,039
LEG	,537	,379	,464
PAL	,004	-,106	,954
POL	,515	,746	,189
TRUST	,791	,370	,198

Using the data given in Table 2, three components may be interpreted as dimensions of social capital. The first of these explains 46.71% of the total variance which is positively correlated, fundamentally with the traditional measures of social capital (TRUST and GROUP). This result indicates that the proxies utilized in the measurement process may be drawn together into one component which reflects the way and the extent to which confidence in individuals and belonging to voluntary associations affects the economy. The following authors all study the way in which “trust” or being a member of a group, when used as proxies for social capital, are related to a greater or lesser extent, to economic growth; Knack and Keefer, 1997; La Porta et al., 1999; Whiteley, 2000; Beugelsdijk and van Schaik, 2001. The second component reveals the extent to which people confide in the forces of law and order (the army and police). This dimension is different from the next component analyzed which is made up of the “civic” and “parliament” variables, and represents how much the population trusts the public administration and parliament In his analysis, Farole (2007) uses an econometric study to measure general confidence and confidence in governmental institutions among others. These variables are explained in terms of “associationism” (on three levels). Overall, these findings support the Putnam thesis that ‘membership matters’ (Farole, Rodriguez-Pose, &

Storper, 2007, pp. 22). Fischer (2006) measures the level of social capital (Yi) as a function of the relative or absolute income position of an individual (Zi) and a vector of additional control variables (Vi). He measures the confidence in state institutions, specifically parliament, the courts, business and the church which represent the quality of the relationship between government and the respondent. Again, higher values for these variables indicate a higher level of confidence.

Thus the first component reflects horizontal or generalized confidence, which complements group membership. Group is considered to be a force capable of dynamizing generalized confidence in social capital theories. According to the criteria used in this study this constitutes the, "synthetic indicator" for social capital since it is built using the two variables that are included in the literature as measurement variables, and with the added advantage that they are united within one variable. (Component 1)

Figure 1



The two remaining components confirm the theories of Putnam, although there is certainly a correlation among the variables, the components analysis facilitates the differentiation between horizontal confidence (first component) from the vertical component, which is divided into two, taking in the difference between, that which from the citizens' point of view, might represent the most "bureaucratic" part of the state (third component) and the part which ensures that the laws are upheld (second component).

The graph axes give the factorial scores of the two principal components obtained from the sample. The abscissa represents horizontal confidence, while the horizontal axis reflects the confidence in the forces of law and order. The average of the scores obtained by the countries is situated at zero so that deviations from the average reflect either greater or lesser confidence expressed by the populations of each country with respect to the given component.

Finland, Sweden, Norway and Germany give values that reflect that horizontal confidence (Generalized Trust) (Group+Trust) are important and which generally remain stable over time, indicating that the results obtained are robust[x]. The level of confidence expressed in the forces of law and order by Germany, Denmark, Holland and Sweden on the other hand, is intermediate when compared to Finland and Norway,

Italia, France and Spain come below the European average with respect to Generalized Trust, but are at a similar level to Central European countries with regard to forces of law and order, that is, somewhat below the performance of Finland and Norway. The United Kingdom differs from the above countries in that there is a high level of confidence in the forces of law and order.

With regard to confidence in the civil service, levels are similar throughout most of the countries of Europe.

Institutional confidence, which is reflected in components 2 and 3, is different for the Civil Service and Security Forces, indicating that society values the two types of public institutions quite distinctly. The results obtained via the analysis of the WVS survey agree with the theories of Miztal (2001) in which he indicates that democratic societies tend to demonstrate uniformity with respect to confidence in institutions. The European countries analysed have similar levels Institutional Trust, these being stable for the period under consideration (1980-99).

6. Conclusions

Social capital is important for development, but does not, on its own, guarantee that this will occur. A combination of different types of capital is needed to bring about growth. Given that the idea of social capital is recent, economic analyses, in stark contrast to studies that deal with human capital, do not contain a single universally held definition of the concept, making it essential to do so. The search for a variable or a set of variables to measure social capital has created the need for a synthetic indicator of confidence or trust.

The principal components analysis facilitates the classification of confidence into one of two dimensions: horizontal or vertical, also known as generalised trust or institutional trust, following the theories of Putnam (2000), Dakhli (2003), Uslaner (1999). In addition, vertical confidence has been classified into two dimensions relative to the bureaucratic part of the state and the part that deals with ensuring that norms and laws are upheld.

The analysis which has been carried out has allowed the European countries to be divided into three groups with respect to Generalized Trust. The Scandinavian countries have high levels of generalized confidence, the Mediterranean countries comparatively low levels, while Central Europe comes somewhere between the two.

Institutional Trust is similar in all of the societies analyzed, which corroborates the idea that within democratic regimes, where institutions are more firmly entrenched, attitudes are similar.

Institutional Trust, which reflects confidence in public institutions, is divided into two independent dimensions: SECURITY and CIVIC. This leads to the conclusion that the separation of powers in democratic societies is firmly rooted and this is reflected in the individual's perception of the society in which he resides.

Contrary to what certain authors claim, there is no evidence that there has been a generalized loss of confidence, rather that levels of confidence within most of the countries analysed have remained relatively constant over time and there have been few changes in country ranking with respect to confidence.

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[i] *"Those tangible substances [that] count for most in the daily lives of people: namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit. . . . If [an individual comes] into contact with his neighbour, and they with other neighbours, there will be an accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole community. Woolcock 2000, pag228*

[ii] *Kenneth Arrow (2000, page. 4): "The term "capital" has three facets: (a) extension in time; (b) deliberate sacrifice in the present for future benefit; and (c) alienability…(Social capital) its especially (b) that fails. The essence of social networks is that they are built up for reasons other than their economic value to the participants (…). I certainly found no consensus at the workshop for adding something called "social capital" to others forms of capital".*

[iii] *Robert Solow (2000, page. 6): "Why social capital? I think it is an attempt to gain conviction from a bad analogy. Generally "capital" stands for a stock of produced natural factors of production that can be expected to yield productive services for some time". ..How could an accountant measure them and accumulate them in principle?*

[iv] *Pérez et al (2005) moots a new idea of social capital, derived from economic transactions and built up through a process of generation of stocks, as occurs with physical capital. However, these authors argue that "….. the variable utilized to measure it (social capital) is not established via a process of detailed investment from which the stock of capital is derived"*

[v] *In the same line, Pérez et al present a concept of social capital from an economic point of view (2005)*

[vi] *In Putnam, R. (2001). Gesellschaft und Gemeinsinn. Bertelsmann Foundation Publishers. (2003) The decline of social capital. Nueva Galaxia Gutemberg, pp 136*

[vii] *The survey from the year 2005 has certain gaps in the data for the countries and the variables analyzed, which is why it is included in the principal components analysis.*

[viii] *Austria, Belgium, Denmark, Spain, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Sweden, and The United Kingdom. This choice was determined, to some extent, by the availability of data with respect to some of the proxy variables such as those that analyse social capital.*

[ix] *The reply obtained from the WVS to the question; "Generally speaking, would you say that most people can be trusted?"*

[x] *Jointly analyzing the four surveys provides the analysis with more depth. Most of the studies carried out in this area focus on a single survey, a factor which might distort the results obtained.*