

Research Paper

# Religion as a determinant of social capital and economic performance: An analysis of Italian data

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**Abstract:** Religion is an individual and spiritual phenomenon, but it is not without collective, even economic implications. The effects of religion exert their impact on economy primarily through the link between individual religiosity and social capital, which encompasses both trust in others and a propensity for associations and volunteering. By nourishing social capital, religiosity therefore contributes to economic development and substitute for roles that the vast world of the third sector and the voluntary sector play in the declining welfare state. Through considering different levels of this relationship (individual, regional, and country level), this paper describes some implications for firm governance.

Using data from 2014 to 2022 from the National Italian Institute of Statistics (ISTAT), this paper investigates the link between the degree of participation in religious life, on the one hand, and trust in others, active participation, or financial support for associations, on the other hand. The positive link between religious involvement and the aforementioned dimensions of social capital is confirmed, even when various areas of a country are considered, which are characterized by different levels of religious participation and social capital, as well as varying economic conditions, education, civil status, age, and gender.

**Keywords:** Religion, social capital, economic performance, worship attendance, trust, volunteering.

## 1. Introduction

Why should economists be interested in religion? In a paper from almost thirty years ago, Iannaccone (1998) identified three major lines of inquiry involving religion and economics: first, a line of research that interprets religious behaviour from a microeconomic perspective; second, studies concerning the economic consequences of religion; third, writings invoking theological principles and sacred writings to promote or criticize economic policies (in a footnote he also adds a fourth line, the literature that evaluates religious organizations from a practical business perspective). The third line is only partially included in economic studies; and the fourth was considered a minority by Iannaccone himself. The second line of research has probably been the most prolific, and it is understood as the relationship between religion and economic growth. In these studies, more or less rigorous microfoundations are often present, which therefore refer back to the first line of research.

The debate on how religion may affect economic outcomes was opened by Max Weber with his famous essay "The Protestant Ethic and the Spirit of Capitalism" (1904/05). In his view, religious beliefs influence people's value systems and attitudes, thereby providing either greater or lesser impetus for economic activity, which leads to individual enrichment. Weber's well-known theory is that in Protestant countries, economic enterprise is more intense because earthly wealth is seen as a sign of divine benevolence, and as proof of being among the predestined. The interconnection between religious beliefs, individual attitudes, and economic outcomes forms the basis of a large body of literature that seeks to analyze the relationship between religion and economic growth. Blum and Dudley (2001) reconsider Weber's study and conclude that the superiority of Protestantism, with respect to Catholicism in terms of economic outcomes, is attributable to the following: by rejecting the Catholic

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sacrament of penance and increasing the individual penalty for defaulting, Protestantism improved the level of mutual trust and cooperation, thus placing these two concepts at the centre of the nexus between religion and economic outcome. Similar ideas are expressed by Barro and McCleary (2003): religious beliefs influence individual traits, such as honesty, work, ethics, thrifty attitude, and openness to strangers, which in turn foster economic growth, as confirmed by their cross-country empirical analysis. Trust and cooperation play a central role in the study conducted by Guiso et al. (2003), in a cross-country study, they found that religion was linked to the economy through several channels, as it affects the attitudes towards trust and cooperation, government, women's participation in the labour market, legal rules, thriftiness, and market economy. They believe that trust and cooperation are the first channels of the connection between religion and growth, and these terms are crucial for the present paper. The idea, in fact, is that religion influences social capital, which has its essential manifestation in reciprocal trust, in the propensity of people to collaborate, and in coming together in associations, which, in turn, favour economic growth.

Therefore, the conceptual scheme that underlies this line of study and the present paper can be summarized as follows:

Religiosity → Social Capital (Trust & Associational Life) → Economic Outcomes

The empirical analysis presented in this paper focuses on the first part of this chain: the relationship between religion and social capital. Religious attitude is measured by the frequency of attendance at places of worship; while social capital is understood as the double dimension of trust in others and in participation, actively or by way of financial support, through associations and organizations. In this study, we analyse Italian data at an individual level over a nine-year period.

Examining a single but internally very diverse country, such as Italy, over a relatively long period, through a rather detailed analysis of social capital considered from different perspectives, allows us to make an important contribution to a literature that is in fact not very extensive.

Section 2 presents the main contributions of the theoretical and empirical literature on the relationship between social capital and economic growth, as well as between religiosity and social capital. Then a description of the analysed data follows (Section 3), and the results of the empirical analysis are reported and commented (descriptive statistics and bivariate analysis in Section 4; and multivariate analysis in Section 5). The study continues with a brief discussion (Section 6), and the Conclusions part ends the paper.

## 2. The links between social capital-economic development and religion-social capital: a brief literature review

The concept of social capital is very popular in contemporary economic debate. However, its definition remains vague and controversial, and in the literature, there is no universally accepted measurement method.

To simplify, it is possible to identify two approaches. The first approach, with its leading advocate being Putnam et al. (1993), conceptualizes social capital in the sense of civicism and identifies the set of values, including mutual trust and cohesion, that help a community overcome the problems of free riding (Guiso et al., 2006). According to this concept, social capital is highly favourable for the economic development of an area. The second approach has its historical advocate in Bourdieu (1980), who identifies social capital with social networks (friends, family, etc.), which are available to the individual and are present in a specific community: in this case the evaluation of the overall effect of greater endowments of social capital depends on the balancing of the positive and negative externalities associated with the various links considered. Whatever its definition, there is a large consensus on a positive relationship between social capital and economic development.

The possibility that social capital could influence numerous aspects of economic life is already implicit in Arrow's (1972) notion: every commercial transaction contains an element of uncertainty that cannot be eliminated by insurance mechanisms and that therefore every economic exchange "has an element of trust within it".

The influence of social capital on a country's economic performance can be exercised through numerous channels. Societies with a high level of trust are potentially more efficient

and provide better allocation of resources. The distortions induced by public intervention in the economy may be more limited in societies where a high degree of trust and a greater sense of civic responsibility prevail. Higher social capital decreases the risk of policymakers' "capture" by holders of particular interests, which makes it more likely that such policies will be adopted that benefit the entire community. The interest of citizens in the common good, in fact, increases the control activity towards public decision-makers, thus making any activity that does not respect the *res publica* riskier for individuals.

Therefore, economic studies have shown that trust derived from the repetition of cooperative social interactions can improve the conditions under which transactions occur, thereby stimulating economic activity and exerting a positive effect on development processes. A social environment rich in opportunities for participation, which allows people to meet frequently, constitutes fertile ground for cultivating shared values and norms of reciprocity.

On the empirical level, numerous scholars have attempted to quantify the impact of social capital on economic growth. Knack and Keefer (1997), for example, found that social capital endowments positively influenced GDP growth per capita between 1980 and 1992 for a group of 29 countries (advanced economies and developing countries). In particular, they highlighted that the contribution of the social capital to the growth of Italy was 2 percentage points (cumulatively in the period examined, against a growth of just under 30 per cent), a lower value of about one and a half percentage point compared to what the country would have registered if the social capital had been equal to that of Switzerland.

The study by Putnam et al. (1993) provided new insights into the analysis of the convergence between Italian regions and attributed the lower growth of the Southern regions observed since the mid-1970s to a lower level of social capital. Even more sophisticated frameworks have been hypothesized and tested: for example, Algan & Cahuc (2010) demonstrate the persistence of trust and its impact on long-run economic performance: they provide evidence that the country of origin significantly influences the inherited trust of descendants of US immigrants and that there is a significant impact of inherited trust on worldwide growth during the 20th century.

Using the above-mentioned variety of approaches to defining social capital has resulted in a large number of variables and methodologies used to approximate and describe the phenomenon of social capital (Dasgupta & Serageldin, 1999; Durlauf, 2002). Moreover, scholars have identified many determinants or variables related to the different aspects and definitions of social capital.

Many studies identify religion as an indisputable determinant of social capital, thanks to the networks generated within its organizations and because religion solicits not only the participatory dimension but also the dimension of trust and civicism. Putnam et al. (1993) argue that a direct relationship exists between social capital and religion, as the latter contributes to the enrichment of both individual and collective social capital. Religion, in fact, following secularization, has not lost its function but has adapted to the conditions of modern society (Goldstein 2018): religious practices foster the sense of participation in organizations. Religious values feed and sustain social capital, which is understood as a set of moral resources that generate cooperation, reciprocity and participation (Uslaner, 1999, 2001). Religion was thus considered a factor capable of re-generating political and social involvement and served as a predictor of civic and social activism (Cartocci, 2001). According to Yeung (2004), Halman and Luijk (2006), and Berggren and Bjørnskov (2011), spirituality and religious beliefs are associated with solidarity, honesty, generosity, altruism, human values, charity, and other positive traits, which thereby promote cooperation with others and foster positive attitudes towards them. Additionally, religiosity is positively related to trust, norms, as well as networks and cooperation. Therefore, religiosity is supposed to be associated with different aspects of social capital. This is also empirically confirmed by several studies. Putnam and Campbell (2012) find that religious Americans are better neighbours than secular Americans, as they are more generous with their time and money, even for secular causes. According to Ruiters and De Graaf (2006), active church members internalized the social norm of altruism (the intrinsic motivation to help others) more than non-members: in their study involving 53 countries, they find that frequent churchgoers are more active in volunteer work, even if this relationship is hardly relevant in more devoted countries (countries where the percentage of churchgoers is higher). Based on findings from the multi-country survey European Values Study, Kaasa (2012) concludes that informal religiosity – believing in and

attending services – fosters social capital by promoting values such as solidarity, altruism, honesty, and others, and also by providing civic skills and encouraging participation in other organizations. The link between social capital and religion is positive, regardless of the specific religious belief, because each religion promotes more or less cohesive social networks (Field, 2003). In fact, a positive relationship between religiosity and social capital is also found in studies concerning Post-Soviet Central Asia (Radnitz, 2009) and South Korea (Jeong, 2010).

The considerations made so far allow us to establish a circle of relationships between religion, social capital, and economic development. Religiousness is related to social capital and, through this, to economic development. By nourishing social capital understood as trust, religion favours economic development, thereby making interpersonal relationships more fluid, and thus favouring the unfolding of the market itself, which cannot be based only on suspicion, coercion or control. On the other hand, religiosity, by generating social capital understood as associationism and participation, compensates for the crisis of the welfare state, and also feeds the third sector, practices and solidarity resources.

Our work investigates, in particular, the first link in the chain that connects religion and the economy, through analysing the link between religion and social capital.

### 3. Methodology

#### 3.1 Data description

The survey was conducted using ISTAT (Italian Institute of Statistics) files for public use, which relate to the multi-purpose surveys on family aspects of daily life from 2014 to 2022.

Regarding the religious habits of the interviewees, the questionnaire contains the following question: How often do you usually go to church or other places of worship? The possible answers are 1: Every day; 2: A few times a week; 3: Once a week; 4: A few times a month (fewer than 4 times); 5: A few times a year; 6: Never.

It is therefore an ordered categorical variable. To make the results of multiple analyses more intuitive, this variable has been rearranged in reverse order: from zero frequency (never) represented by 1, to maximum expected frequency (every day) represented by 6.

Attendance at places of worship is related to a series of other variables, which includes both individual characteristics of the subjects such as gender, age, place of residence, “static” and “dynamic” economic conditions, marital status, level of education, and aspects of social capital, such as trust, participation and attitude towards associations and volunteering.

More specifically, there are several questions about trust. For this study, we have chosen three: one concerns “generic” trust in people (Do you think that most people can be trusted or do you have to be very careful?); another concerns a fairly specific aspect of trust in a person already familiar to the research subject (Imagine you have lost your wallet, how likely do you think it will be returned to you by a neighbour?), and another concerns the same situation but with respect to an unknown person (Imagine that you lost your wallet with some money and your documents in it, and it has been found by someone. How likely do you think your wallet would be returned to you with the money if it were found by a complete stranger?).

Regarding voluntary work and associations, the survey includes several questions. The ones we selected are as follows: one regards actual participation, the other regards financial support, namely: In the last 12 months, have you contributed through non-paid activities to any association or volunteer group? and, have you given money to an association in the past 12 months? The first selected question about social capital (the “generic” trust) is common to many surveys, but Glaeser et al. (2000) warn that it is vague, abstract and hard to interpret, and suggest measuring trust and trustworthiness through experiments involving monetary rewards. We assume that the presence of more specific questions, such as the others shown, will guarantee reliable results.

#### 3.2 Data analysis

To analyze the data, we first utilize descriptive statistics, followed by bivariate and multivariate analyses. In this way, we intend to assess correlations and their statistical significance. The results of these analyses can be found in the following section.

## 4. Findings

### 4.1 Descriptive statistics and bivariate analysis

Before starting our analysis, let us remember that in Italy mainly the Catholic religion is prevalent. The presence of other faiths is primarily a result of increased immigration flows in recent years. Notably consistent is the presence of Orthodox and Muslim communities. The data used for the purpose of this study does not allow us to distinguish participants' membership in different religions. We know the frequency of attending places of worship, without distinguishing between the types of places of worship attended.

The first step in our analysis is to observe the average attendance habits of Italians at places of worship. Table 1 shows that 25.32% of the respondents never go to places of worship (level 0 of the variable *Freq\_worship*), 35.17% go a few times a year (level 1), 14.26% go a few times a month (level 2), 18.10% go once a week (level 3), 5.74% more than once a week (level 4), 1.41% go every day (level 5). Therefore, the attendance at church or other places of worship, ranging from minimum to occasional, concerns 74.68% of Italians. However, for more than a third of Italians, attendance is only occasional. The percentage of Italians who attend church or other places of worship on a non-occasional basis (i.e., excluding those who never attend church and those who attend it occasionally, with attendance levels ranging from 2 to 5) are therefore 39.51%. This observation pertains to a relatively long period, during which changes can be anticipated. In fact, over the years a decline in the attendance of places of worship can be observed: in the first three years (2014-2016) the percentage of those who non occasionally (levels from 2 to 5) go to places of worship is 44.81%; the percentage decreases to 40.61% in the central period (2017-2019) and continues to decrease in the last three year (2020-2022): 32.93% (but in this last period the effect of COVID-19 pandemic should be considered)<sup>1</sup>. The percentage of those who never attend places of worship in these three sub-periods increases from 20.98% to 24.51% to 30.61%. The tendency towards secularization typical of Western societies seems to be fully confirmed by these data.

Table 1. Frequency of attendance of places of worship. Source: Authors' own

Freq worship	Freq.	Per cent	Cum.
0	95,348	25.32	25.32
1	132,433	35.17	60.49
2	53,685	14.26	74.74
3	68,167	18.10	92.85
4	21,618	5.74	98.59
5	5,326	1.41	100.00
<b>Total</b>	<b>375,577</b>	<b>100,00</b>	<b>-</b>

Women attend places of worship more often than men: considering the whole period, 29.41% of men never go to church, this is true for only 21.54% of women; non-occasional attendance is characteristic of 45.71% of women and 32.81% of men. Spearman's correlation between gender and attendance at places of worship is significant at 1% (the value is 0.1373). This relationship is verified throughout the period; however, it has slightly weakened over the years.

There is also a clear correlation between the attendance of places of worship and the geographical area of residence, with a clear distinction between South-Islands, on the one hand, and Center-North on the other: the percentage of non-occasional attendance is 34.46% in the North-West, 35.57% in the North-East, 34.94% in the Center, 47.86% in the South, 42.88% in the Islands. To test the significance of the differences we carried out an ordered probit, with worship attendance as a dependent variable and geographical divisions as independent variables: through the rotation of the excluded category (all the categorical variables but one must be included in the estimated model) a "ranking" in the frequency of visits has been obtained. This sees the South at the head, followed by the Islands, the North-

<sup>1</sup> Actually Alfano et al. (2023) find that in Italy, during the COVID-19 pandemic, there has been an increase in religiousness, as a result of seeking spiritual comfort in the face of a frightening event. Mass attendance itself has increased, although often via streaming, as it was forbidden or dangerous to go to church physically. Most likely, following the mass via streaming was not considered by the interviewees as attending church.

East, the Center and the North-West; and all the differences, except that between Center and North-West, are significant at 5%. It is worth noting that the average GDP is higher in the Northern regions and lower in the South and the Islands. Therefore, the attendance at places of worship is higher in poorer areas and lower in richer areas. In all geographic areas, attendance at places of worship decreases over time, but the difference between the examined areas does not change significantly.

The relationship between attendance of places of worship and age is not linear, but U-shaped: considering non-occasional attendance, this is high in childhood and pre-adolescent age (it reaches 65.44% in the age group between 6 and 13 years and 61.84% between 11 to 13 years) and then significantly drops in youth (it reaches a minimum of 21.29% between 20 and 24 years); then it gradually rises, reaching a peak of 50.26% in the range between 65 and 74 years, then it shows an understandable slight decrease in the higher age range, concerning the over 75 generation, of which 47.78% frequents places of worship. The relationship between attendance and age remains similar over the years.

The relationship between educational qualifications and attendance at places of worship is U-shaped, too. In fact, attendance significantly decreases as educational level increases, but at the highest level of education, there is a slight increase. Non-occasional attendance characterizes 52.82% of interviewees with no educational qualification or only an elementary school leaving certificate, 36.7% of those with a middle school certificate, 34.27% of high school graduates, and 35.87% of graduates. An analysis using ordered probit (with worship attendance levels as dependent variables and different educational levels as independent variables) reveals the significance (at the 1% level) of these differences among educational levels. This kind of relationship does not substantially change over the years; only the non-significance of the difference between the two highest levels of education is noteworthy in the early years of the surveyed period.

There is a relationship between worship attendance and marital status too: non-occasional attendance concerns 34.05% of celibate/single, 43.4% of married or cohabiting, 31.28% of separated/divorced, and 49.6% of widows/widowers. The analysis using the ordered probit model shows that these differences are all significant at the 1% level and persist throughout the examined period.

Between worship attendance and “static” economic conditions there is an inverted U-shaped relationship: the relationship is positive up to a middle-high economic condition, then it becomes negative at the highest levels of economic condition: non-occasional attendance concerns 37.03% of those who consider their economic resources insufficient, 38.72% of those who consider their economic resources poor, 40.15% of those who consider their economic resources adequate and 36.88% of those who consider their economic resources excellent. The analysis using ordered probit reveals that such differences are significant at the 1% level, except between the highest and lowest levels of income (the difference is not significant). The inverted U-shaped relationship is confirmed throughout the period (in the early years, the difference between the two highest levels of economic conditions is not significant). It is noteworthy that the inverted U-shaped relationship persists even when data are controlled for education and area of residence, which are the variables clearly related to economic conditions.

An inverted U-shaped relationship is visible also between worship attendance and “dynamic” economic conditions: non-occasional attendance concerns 37.13% of those whose economic condition has worsened a lot, 39.41% of those whose economic condition has gotten a little worse, 40.38% of those whose economic condition has remained more or less the same, 35.56% of those whose economic condition has improved somewhat and 31.18% of those whose economic condition has improved considerably. All these differences are significant at 1% level, according to the ordered probit. The shape of the relationship is confirmed over the years, even though in the early years, at the highest level, those whose economic condition has improved considerably attend worship places more extensively than those whose economic condition has improved somewhat.

We now turn to the most important part of our analysis: the relationship between religious attitudes and social capital. Considering the overall period, the percentage of those who say they can generally trust most people is only 23.13%. Considering a trend, we observe that in 2014, the percentage is 23.73%. During the period 2015-2018, the percentage decreases below 22%. From 2019 to the end of the period, the percentage remains above 24%.

This measure of trust is positively correlated with the attendance of a worship place. The Spearman correlation between the two variables (generic trust and worship attendance) is positive and statistically significant at the 5% level. Among people who do not occasionally attend places of worship, the percentage of those who say they can generally trust most people is 23.54%. This percentage is 22.93% among people who occasionally or never attend places of worship.

Another measure of trust consists in the probability attributed to the return of a lost wallet by a neighbour: 38.24% of Italians consider it very likely that a neighbour will bring their wallet back, 38.92% believe the event to be quite probable, 16.6% consider it unlikely, 8.24% think it is not at all probable (if we consider those who consider the return very likely or quite probable, this percentage is 77.16%). The percentage of confident people, which declined from 2014 to 2015 (from 73.3% to 71.54%), has been increasing since then, with only a slight exception between 2020 and 2021 (from 78.42% to 78.34%). This kind of trust is positively correlated with the attendance of places of worship: the Spearman correlation between the two variables is positive and significant at 1% level; the percentage of confident people is 75.77% among people that not occasionally attend places of worship; it is 74.84% among people who rarely or never attend places of worship.

The last measure of trust is the probability attributed to the return of a lost wallet by an unknown person. Predictably, trust in unknown persons is lower than trust in neighbours. In fact, only 2.55% of Italians think it is very likely that an unknown person would bring back their wallet, 12.06% believe the event to be quite probable, 43.64% consider it unlikely, 41.64% think it is not at all probable (if we consider confident those who consider the return very likely or quite probable, this percentage is 14.61%). The temporal trend of this variable is similar to the previous one: the percentage of confident people declined from 2014 to 2015 (from 13.09% to 11.76%), then it increased, with only a slight exception between 2021 and 2022 (from 17.67% to 17.34%). Also this kind of trust is positively correlated with the attendance of places of worship but in a less evident way than the variable discussed before: the Spearman correlation between the two variables is positive and significant at 10% level (the 5% threshold is just barely exceeded); the percentage of confident people is 14.93% among people who do not occasionally attend places of worship; it is 14.37% among people who rarely or never attend places of worship.

The other aspect of social capital, besides trust, is involvement in associations and volunteering. 10.37% of the Italian population engaged in non-paid activities for associations or voluntary groups within the 12 months preceding the survey. This percentage increased from 2014 to 2016, then steadily decreased until 2021 (7.73%), and rose again in 2023. The correlation between attendance at places of worship is evident: the Spearman correlation between the two variables is positive and significant at the 1% level. The percentage of people who carried out volunteering activities is 13.58% among those who do not occasionally attend places of worship, and 8.49% among those who rarely or never attend places of worship.

Another sign of attention and participation in the world of volunteering and associations is the financing of associations. This is done by 15.2% of Italians. Such a percentage has fluctuated over the years, with a marked reduction in the last two years. This variable is also clearly correlated with worship attendance: the Spearman correlation between the two variables is positive and significant at the 1% level. The percentage of people who finance associations is 17.49% among those who do not occasionally attend places of worship; it is 13.91% among those who rarely or never attend places of worship.

## **4.2 Multivariate analysis**

As found in the previous section, there is a positive correlation between the frequency of visits to places of religious worship and social capital. However, the variables of social capital are often significantly correlated with individual characteristics, which, in turn, are correlated, as we have seen before, with the attendance of religious places. Therefore, to properly assess the nature and extent of the relationship between religious attendance and social capital, it is necessary to carry out a multivariate analysis, in which the individual characteristics act as "control" variables. It is important to observe that these results may be affected by endogeneity. Individuals predisposed to trust and volunteerism might also be more likely to attend religious services. In other words, there may be unobservable characteristics that correlate with attendance at places of worship and trust and volunteering. A further step

in the research could consist of an analysis with instrumental variables or with panel data that “control” for certain individual fixed effects. Anyway, we underline the “observational” nature of this analysis, which is also reflected in the interpretation of the results focused on correlations between phenomena and not on causal relationships.

The analysis conducted views each component of social capital as a dependent variable and religious participation (attending churches and other places of worship) as a determining variable. This variable, initially divided – as we have seen – into six levels, is reorganized on four levels: the non-frequenters (those who never go to places of worship) [Freq\_never], occasional frequenters (those who only sometimes go to places of worship in a year) [Freq\_occasional], regular frequenters (those who go there a few times a month or once a week) [Freq\_regular], and daily or almost daily frequenters (those who go to places of worship several times a week or every day) [Freq\_daily]. The category of occasional frequenters is excluded from the models; therefore, the other categories are compared with this category.

The same other variables as the ones considered in the bivariate analysis act as control variables; these are: gender [Sex], in which men are the reference category and therefore excluded from the model; age [Age], divided into fifteen ranges, but treated as a continuous variable; the level of education, divided according to what has been established previously, i.e., there are those who have no educational qualification or have only an elementary school certificate [Educ\_1], those who have a middle school certificate as their highest level of education [Educ\_2], which is the category excluded from the models and with which the comparison is made; those who have a high school certificate [Educ\_3], as well as graduates [Educ\_4]; the economic condition in a “static” sense, i.e., whether the economic resources in the last year, considering the needs of the whole family, have been insufficient [Econsit\_1], poor [Econsit\_2], which is the reference category, adequate [Econsit\_3] or very good [Econsit\_4]; the economic condition in a “dynamic” sense, that is if the family’s economic situation, with respect to the previous year, has worsened a lot [Econchange\_1], has gotten a little worse [Econchange\_2], has remained more or less the same [Econchange\_3], which is the reference category, has improved somewhat [Econchange\_4], or has improved considerably [Econchange\_5]; the geographical area of residence, also divided according to what has been established above: North-West [Geo\_NorthWest], North-East [Geo\_NorthEast], Center [Geo\_Center], which is the reference category, South [Geo\_South] and Islands [Geo\_Islands]; finally the marital status: there are the single/unmarried people [Status\_single], that is the category excluded from the model, the married/cohabitants [Status\_married], the separated [Status\_separated], as well as widows and widowers [Status\_widow/er]. A variable indicating the year of the analysis is included as a temporal trend variable [Year]. The theoretical framework inspiring this paper suggests that an increase in social capital is associated with higher income. But we suppose, as the literature usually indicates, that this happens at a macro level: countries or regions with higher levels of social capital have, *ceteris paribus*, higher income. This does not necessarily occur at a micro level: the literature typically does not assume that higher social capital at the individual level implies greater personal income. This is the reason why we could introduce income as an independent variable, where a form of social capital is the dependent variable, without evident problems of reverse causality.

The dependent variables, i.e., measures of social capital, are binary or are ordered categorically. The binary (yes/no) variables are: generic trust in others; participation in volunteering activities; financing of associations; the ordered categorical variables are: trust towards the neighbour and trust towards an unknown person (the supposition that the person brings back the lost wallet can be very probable, quite probable, unlikely, not at all probable). If the dependent variable is binary, the performed analysis is a binary probit (or a simple probit); if the dependent variable is an ordered categorical variable, the analysis is an ordered probit. Both for the probit and ordered probit models, robust standard errors have been used.

Table 2. Determinants of different aspects of social capital. Source: Authors' own

<i>Dependent variables</i> →	Generic trust in others	Trust in neighbor	Trust in unknown person	Participation in volunteer activities	Financing of associations
	Binary Probit	Ordered probit	Ordered probit	Binary Probit	Binary Probit
<b>Model</b>					
<i>Indep. variables</i> ↓					
Freq_never	0.0158**	-0.0876***	-0.0208***	-0.1304***	-0.1110***
Freq_occasional	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.
Freq_regular	0.0721***	0.0444***	0.0465***	0.2494***	0.0898***
Freq_daily	0.1643***	0.0681***	0.1346***	0.6356***	0.2740***
Sex	-0.0846***	0.0095**	-0.0246***	-0.0817***	-0.0358***
Age	-0.0014	-0.0142***	-0.0012	-0.0095***	0.0748***
Education_1	-0.1350***	-0.0468***	-0.0690***	-0.3504***	-0.3126***
Education_2	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.
Education_3	0.1827***	0.1374***	0.1472***	0.2253***	0.3641***
Education_4	0.4750***	0.2626***	0.3258***	0.4307***	0.7181***
Geo_NorthWest	0.0623***	0.1123***	0.1160***	0.1631***	0.0825***
Geo_NorthEast	0.1264***	0.1833***	0.1947***	0.2968***	0.2153***
Geo_Center	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.
Geo_South	-0.0920***	-0.2064***	-0.1505***	-0.2120***	-0.3320***
Geo_Islands	-0.15656***	-0.1114***	-0.1396***	-0.1357***	-0.2479***
Econsit_1	-0.0879***	-0.1731***	-0.0910***	-0.0845***	-0.1308***
Econsit_2	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.
Econsit_3	0.1583***	0.1681***	0.1132***	0.0922***	0.2189***
Econsit_4	0.3841***	0.2562***	0.2187***	0.1773***	0.3719***
Econchange_1	-0.1790***	-0.1355***	-0.1121***	0.0051	-0.0289**
Econchange_2	-0.0856***	-0.0368***	-0.0342***	0.0116	0.0149**
Econchange_3	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.
Econchange_4	0.0779***	0.0369***	0.0677***	0.0391***	0.0521***
Econchange_5	0.0501*	-0.0339	0.0472*	-0.0013	0.0035
Status_single	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.	Ref.cat.
Status_married	-0.0170**	0.0545***	-0.0017	-0.0592***	0.0780***
Status_separated	0.0245**	-0.0448***	-0.0057	-0.0291**	0.0044
Status_widow/er	-0.0302**	0.0914***	0.0078	-0.1633***	-0.0441***
Year	0.0101***	0.0257***	0.0326***	-0.0211***	-0.0249***
Constant	-21.2552***	-	-	41.1744***	47.9499***
<b>Statistics</b> ↓					
Number of observations	337,759	336,397	335,611	336,575	336,324
Log pseudolikelihood	-176039.46	-407242.84	-352595.15	-104873.7	-131092.72
Wald chi2#	(23) 13164.35	(23) 18077.48	(23) 15777.49	(23) 14538.88	(23) 23251.77
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R <sup>2</sup>	0.0379	0.0221	0.0223	0.0697	0.0915

\*\*\* Significant at 1%; \*\* Significant at 5%; \* Significant at 10%

# Degrees of freedom appear in brackets

Table 2 presents the coefficients, significance levels, and relevant statistics for the five estimations, which follow the same order as the bivariate analysis (generic trust, trust in neighbours, trust in unknown persons, participation in volunteering activities, and financing of associations).

We can observe that the relationship between attendance of places of worship and the different components of social capital is positive and “linear”: compared with the occasional frequenters (the reference category), the non-frequenters have less trust in their neighbours and in unknown persons, participate less extensively in volunteering activities and finance associations less extensively; the regular and daily frequenters have more trust, participate more extensively in volunteer activities and finance associations more extensively than occasional frequenters (with a higher coefficient for daily frequenters). The only exception to “linearity” is in generic trust, as non-frequenters have more trust than occasional frequenters

(but the global positive effect of religious participation persists, as daily frequenters have more trust than regular frequenters, and these have, in turn, more trust than occasional frequenters).

The results of the bivariate analysis are therefore confirmed, even when we “control” for other variables, which in turn correlate with both social capital and religiosity. The results of the estimations confirm the relationship of these variables with social capital. In fact, coefficients are usually significant.

The effect of gender is always significant, but we can see differences concerning all components of social capital. In fact, women have less general trust and less trust in unknown persons than men, participate less extensively in volunteer activities, and finance associations less extensively, but they have more trust in their neighbours than men.

The relationship between age and trust is negative (trust decreases with age), but the coefficient is significant only for trust in neighbours; participation in volunteering activities significantly decreases with age but the financing of associations significantly increases with age (the last two results are easily understandable: young people have more time, energy and enthusiasm for activities organized by different association, while financial resources increase with age; furthermore, financing and participation in associations can be, to a certain extent, substitutes).

The relationship between education and all components of social capital is unequivocally positive and linear: trust, participation, and financing increase significantly as education levels rise. These results confirm what Putnam et al. (1993) found in their pioneering study: social capital is not uniformly distributed in different Italian areas: the amount of all the components of social capital is higher in Northern areas, followed by Central regions, while the lowest values are registered in Southern Regions and the Islands. This result is statistically significant concerning each component of social capital.

The economic condition is positively and linearly related to all components of social capital: when the amount of financial resources available to individuals and their families increases, trust, participation in volunteer activities, and the funding of associations also increase, in a statistically significant manner. The positive and linear relationship between economic conditions and social capital is not so clear when we consider “dynamic” economic conditions, that is the change with respect to the previous year. In fact, a global positive (even if not always linear) relationship emerges if we consider the different forms of trust, while the relationship is more uncertain if we consider participation in volunteering activities and the financing of associations.

The relationship of marital status with trust is globally uncertain (no significant differences among different statuses emerge if we consider trust in an unknown person; the relationship of marital status with generic trust and trust in neighbours have opposite signs); regarding participation in volunteering activities, it is significantly higher for singles than for all other statuses, while married people finance associations more extensively than other categories (this is consistent with greater economic stability usually associated with marital status). Regarding the trends (their effect is estimated when the other factors are considered constant), all forms of trust increased over the years, while participation in volunteer activities and participation in the financing of associations decreased.

## 5. Discussion

As we have seen in the Introduction, the link between religion and economics can operate on a micro or a macro level, but the two levels are intertwined: individual religious beliefs affect individual attitudes toward cooperation, government, etc. The consequence of this is that in countries where some religions or some beliefs prevail, which contribute to the formation of attitudes that are more favourable to economic development, economic performance is better than in countries where other religions or religious beliefs prevail. In this study, the empirical test focuses on the individual level: people who frequently attend places of worship tend to have, on average, more trust and a greater propensity for associationism than those who attend places of worship less frequently or not at all. Of course, we can suppose that this has consequences on a macro level. But the empirical analysis itself and the observations of the “generalized facts” suggest some caveats: religion is only one of the “determinants” of social capital. Therefore, if in a set of countries or regions, other

determinants of social capital have a different distribution than religious attitude, then at a macro level the relationship between religion and social capital may be irrelevant or even opposite to features at an individual level. This study analysed the Italian situation, where we can compare different macro-areas. In Southern regions, the religious attitude is more pronounced than in Northern and Central ones, but the social capital (both in the sense of trust and associationism) is lower (and income is lower, too). We can explain this contradiction between the micro and macro levels by noting that in the Southern region, the average level of education (an essential determinant of social capital) is lower. Moreover, historical events have been significantly more unfavourable to the growth of social capital, according to Putnam et al. (1993). In a cross-country analysis, even the link between attendance at places of worship and economic growth may present an opposite sign with respect to what is expected (attending places of worship is positively related to social capital and the latter is positively related to economic performance; therefore, we should expect a positive link between religious attendance and growth). This is supported by Barro and McCleary (2003), who found a positive relationship between religion and economic growth, but also found that economic growth is negatively related to church attendance.

Even if we must be very cautious in drawing macroeconomic conclusions from individual-level relationships, perhaps some implications can be drawn at the corporate governance level. It is widely recognized that trust among staff, employees, and their management, as well as employee collaboration, increase firm performance (Bounchen & Fredrich, 2016; Nešić & Lalic, 2016). Trust and the attitude to collaborate are two components of social capital, which, as our study's findings suggest, may be influenced by religious attitudes. Of course, this perspective may not be translated into a preference for people with a religious attitude in personnel selection processes, because this would be discriminatory. However, this consideration may also be helpful in avoiding the opposite type of discrimination, a hostile attitude towards employees or potential employees who express a religious perspective, or whose religiosity is known, given the presumed opposition between God and Mammon. According to this last view, those with religious beliefs would not feel comfortable in an environment where profit has inevitable centrality. On the contrary, the presence of people with religious beliefs and practices at a firm may increase trust among employees and between employees and management, and it may also increase the company's collaborative spirit and the ability to cooperate, and this way can contribute to improving firm performance.

## 6. Conclusions

Although secularization is a feature of contemporary society, the religious dimension has not disappeared from the life of modern humanity. However, religiosity often translates not only into a personally experienced event, but into more active participation in the world. This experience of the religious attitude is undoubtedly subject to the pendulum of history, and moments of greater extroversion and "worldliness" of religious sentiment alternate with phases of greater internalization and "reflection". The age we live in seems to push us towards the first attitude. The recently deceased Pope Francis I himself invited people to live a faith immersed in the world, which places less emphasis on theological depths and more on concrete attention to the problems of the vulnerable. All this is supposed to happen in a context in which the role of assistance to the disadvantaged and attention to the needs of the people are increasingly entrusted to individuals – whether they work in associations or in voluntary groups – and much less to the state, which is gradually withdrawing from performing the tasks that once belonged to the welfare state. Therefore, in this historical era it is not surprising that those who experience religious practice more intensely are also more inclined to experiencing closeness to others, both as a general attitude through being more oriented towards trust, and in a concrete sense, as participation in associative life and voluntary work, dedicating their own time to such activities or by allocating financial resources to actions.

The study therefore reveals that a more intense religious practice positively correlates with greater social capital, and this relationship is also beneficial in areas that differ socio-culturally, such as the various Italian macro-areas. This social and cultural diversity also impacts the phenomena studied, namely religious participation and social capital. Likewise, the sign and significance of the relationship between religiosity and social capital do not change when individual variables, which are correlated with both religiosity and social capital,

such as gender, age, education, marital status, and economic condition, are taken into consideration. This study also suggests that the link between religiosity and economic performance may exist at the firm level: the presence of personnel with a religious attitude may increase trust among employees and between employees and management and may positively influence the collaborative spirit within the company and thus improve firm performance.

In the background of this analysis there is therefore a practical, worldly, even economic effect of a typically interior phenomenon such as religious practice: if religiosity nourishes social capital and the latter is also an important economic factor because it favours economic growth and replaces the welfare state in certain areas and improves firm performance, then religiosity is not a phenomenon separate from the “practical” world, but has repercussions of great importance.

In addition to the interesting results of this research, many further investigations are possible. Starting from the same data, the time frame can be extended, and the range of control variables can also be expanded to achieve greater robustness in the analysis and to better understand the existing connections between religiosity and social capital. Moreover, more advanced econometric techniques can help manage possible endogeneity problems. Going beyond this data, it is possible to consider a targeted investigation that explores, even if on a smaller sample created ad hoc, the religion-social capital nexus in greater depth. Furthermore, the corporate dimension of the relationship, mentioned in some passages of the work as a promising area of investigation, can be explored on both theoretical and empirical levels.

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