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RELIGIOSITY, ECONOMIC GROWTH AND DEVELOPMENT DYNAMICS: AN INTERNATIONAL PERSPECTIVE*

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Abstract
This study examines the relationship between religiosity and economic growth as an indicator of modernization. It also examines the relationship between religiosity and various dimensions of development such as educational attainment, mortality rate, and urbanization. To this end, average country-level data from 6 different survey waves of the World Values Survey, spanning the period 1989-2022, and various data sources, including the World Christian Encyclopedia, Religion and State Project, Penn World Table, World Development Indicators are utilized. The analyses include a maximum of 108 countries. The ongoing secularization paradigm is experienced differently in each society, depending on the predominance of religious belief and societal characteristics, including the degree of cultural and social diversity. The Seemingly Unrelated Regression method is employed to address the potential problem of correlation between the error terms of the regressions utilizing different religiosity indicators. Estimates indicate that religiosity is negatively associated with economic growth, the presence of a state religion and religious pluralism, while it is positively associated with state regulation of the religious market. Education, which is one of the most fundamental indicators of development, is positively correlated with religiosity. Nevertheless, the most characteristic indicator of modernization and development, urbanization, is negatively related to religiosity.
Keywords: Religiosity, Economic growth, Modernization, Seemingly unrelated regression, World values survey
JEL Codes: P00, Z12

DİNSELLİK, EKONOMİK BÜYÜME VE KALKINMA DİNAMİKLERİ ÜZERİNE ULUSLARARASI BİR PERSPEKTİF

Öz
Bu çalışma, dinsellik ve modernleşmenin bir göstergesi olarak ekonomik büyüme arasındaki ilişkiyi incelemektedir. Ayrıca dinsellik ile eğitim, ölüm oranı ve kentleşme gibi kalkınmanın çeşitli boyutları arasındaki ilişki de incelenmektedir. Bu amaçla, 1989-2022 dönemini kapsayan Dünya Değerler Araştırması'nın 6 farklı anket dalgasından elde edilen ülke ortalamalarına dayanan veriler ve World Christian Encyclopedia, Religion and State Project, Penn World Table, World Development Indicators gibi çeşitli veri kaynakları kullanılmıştır. Analizlerde kullanılan örneklem en geniş şekliyle 108 ülkeden oluşmaktadır. Süregelen sekülerleşme paradigması, dini inancın baskınlığına ve kültürel ve sosyal çeşitliliğin derecesi de dahil olmak üzere toplumsal özelliklere bağlı olarak her toplumda farklı şekilde deneyimlenmektedir. Farklı dindarlık göstergelerini kullanan regresyonların hata terimleri arasındaki potansiyel korelasyon sorununu ele almak için Görünüşte İlişkisiz Regresyon yöntemi kullanılmıştır. Regresyon tahminleri, dindarlığın ekonomik büyüme, bir devlet dininin varlığı ve dini çoğulculuk ile negatif ilişkili olduğunu, dini piyasanın devlet tarafından düzenlenmesi ile ise pozitif ilişkili olduğunu göstermektedir. Gelişmişliğin en temel göstergelerinden biri olan eğitim, dindarlık ile pozitif ilişkilidir. Bununla birlikte, modernleşme ve kalkınmanın en karakteristik göstergesi olan kentleşme dindarlıkla negatif ilişkilidir.
Anahtar Kelimeler: Dinsellik, Ekonomik büyüme, Modernleşme, Görünüşte ilgisiz regresyon, Dünya değerler araştırması
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Introduction

Historically, religion has played a defining role in world politics, identities, and even economic structures, especially prior to the emergence of nation-states. The relationship between political economy and religion has thus become an important field of research. In his foundational work "The Protestant Ethic and the Spirit of Capitalism", Weber (2012) focuses on the spirit of capitalism which is a main source of work ethic of Protestantism. He argues that the spirit was born in the 16th and 17th century ascetic Puritan churches and sects. Material success was the main focus of these religious groups. At the heart of this ethical understanding is the idea that it is the duty of the individual to increase personal wealth, that labor becomes a goal, and that the urge is to make money. And modern capitalism, for Weber, compounds economic activity with a form of economic ethic. An ethic that provides a basis for profit-seeking characteristics of capitalism with a combination of economic organization and labor. The spread of Protestant ethics in the 17th century and its penetration beyond churches and denominations into society in the 18th century led to the gradual loss of the religious characteristic in this ethic (Weber, 2012). But capitalism, especially in Europe, remained as a legacy of this ethical and religious expansion. So, values, religious beliefs, and cultural factors facilitated the growth of capitalism through individual choices. They have a significant impact on economic and social development in addition to mere economic and materialistic factors. But economic expansion lost its religious component in return. In fact, there are studies showing that economic development itself has a destructive effect on religiosity (McCleary & Barro, 2006). Although modernization originated in the West and has Christian roots, its effects have spread globally through the nation-state and the market, which are free of theological influence and shaped by historical and contextual factors (Gauthier, 2020). Capitalism, which has become highly financialized and consumption-oriented, appears to have lost its foundational spirit and is spreading globally in this manner.

This research analyzes the association between economic development and religious beliefs, as well as the relationship between various aspects of development and religion. The goal is to partially replicate the work of McCleary and Barro (2006) by examining the issue of religiosity from the supply and demand sides. The main hypothesis of this study is that economic growth, state religion, state regulation, and religious pluralism collectively and individually influence indicators of religiosity. Specifically, higher economic growth and religious pluralism and the existence of a state religion are associated with lower levels of religiosity. Conversely, strict state regulation is associated with higher levels of religiosity. The Seemingly Unrelated Regressions (SUR) technique is preferred in this research because the analyses conducted in the study use 5 to 9 different variables as indicators of religiosity. And the indicators of religiosity used in each equation often overlapped or interacted. This approach permits the inclusion of regressions that may be related by correlations of unobservable disturbances in the analysis simultaneously. The potential correlation of error terms with each other necessitated the use of SUR in this study.

The next part of the study summarizes the theoretical debate on religion and secularization. The second part discusses the data and methodology. The third part focuses on the empirical findings. The fourth part concludes the study.

1.Two Different Theories of Religiosity

There are two main theories about the concept of religiosity. According to the demand side theory, religious belief and participation in religious rituals decline with modernization and economic development (Wilson, 2016). Whereas for the supply side theory, government involvement in the market influences religiosity. State religion or state regulation of the religious market can be listed as direct government intervention. Religious pluralism is another essential element of the model. Contrary to Wilson, proponents of the second theory argue that the demand for religion remains

constant, but changes in the equilibrium result from changes on the supply side (Stark & Finke, 2000; Young, 2016).

According to Wilson (2016, p. 9), secularization is the process by which religious thought, practice, and institutions lose social significance. As a result of modernization, religion loses its position as a popular choice, and thus loses its power and prestige in society. In fact, the process is accelerated by attempts to adapt traditional religious doctrines, as is happening in the USA. Like Wilson, Bruce (2001) argues that the decline in religious belief is due to a lack of demand rather than an inadequate supply. He asserts that a supply-side adjustment would not reverse the decline in Britain based on the data between 1851 and 2000. Finke and Stark (2005), on the other hand, focus on North America, where individuals have turned to various emerging church alternatives, and religious participation has increased. These two societies confirm two sides and different aspects of the theory.

For supply-side researchers, religious pluralism increases competitiveness in the market by providing individuals with a range of choices, which increases religious participation. However, it also undermines the social power of religion (Finke & Iannaccone, 1993; Finke & Stark, 2005; Iannaccone, 1991; Stark & Bainbridge, 1987). Conversely, Berger (1967, p. 134) proposes that competition results in a decline in religious beliefs and, consequently, a decline in religious participation. Diversity allows individuals and institutions to compare and recalibrate. According to Fox and Tabory (2008), religious pluralism increases the level of competition in the religion market, while state regulation creates a monopoly that limits competition and negatively affects religious belief and participation. However, the decline in belief is not as significant as the decline in participation. This supports Stark and Finke's (2000) argument that state regulation creating a religious monopoly does not lead to a change in belief, but rather to a decrease in participation. In other words, the demand for religion remains stable or shows slight changes. Gill (1999) agrees that the demand for religion can fluctuate due to socioeconomic factors. However, he argues that secularization is primarily a result of state regulation rather than a demand-side phenomenon. State intervention in the market increases the cost of religious consumption, leading to a decrease in participation and religious diversity.

The state's involvement in the religious market is not limited to regulation. By declaring an official state religion, the state can indicate its position in religious debates. Chaves (1994) defines secularization "not as the decline of religion, but as the decline of the scope of religious authority" (p. 750). In other words, religion becomes less visible in state affairs. The absence of an official state religion is seen as a defining characteristic of a secular society. Thus, the presence of a state religion is expected to be inversely related to religious belief and participation.

McCleary and Barro have been doing research on both the supply and demand sides of religiosity since the 1990s (Barro & McCleary, 2003a; Barro & McCleary, 2003b; McCleary & Barro, 2006; McCleary & Barro, 2019). For them, religiosity tends to decline with economic development. However, their findings on the effects of subcomponents of development on religiosity are not homogeneous. For example, urbanization has a negative relationship with religiosity, while education has a positive relationship. The existence of a state religion increases religiosity because subsidies are channeled to organized religion. However, state regulation decreases religiosity. Religious pluralism increases attendance at formal religious services, while it does not significantly affect religious beliefs (McCleary & Barro, 2006). This study partially replicates the analyses of McCleary and Barro's 2006 study.

2.Data and Method

2.1. Data

This study analyzes religiosity data from six waves of the World Values Survey (WVS) (Inglehart, et al., 2022), covering the periods 1989-1993, 1994-1998, 1999-2004, 2005-2009, 2010-2014, and

2017-2022. The waves include 21, 55, 41, 58, 60, and 64 countries, respectively. The first wave, conducted between 1981 and 1984, is excluded from the analysis because it includes data from only 11 countries. Like McCleary and Barro, country averages are used for the religiosity data. Their data on religiosity come from a variety of sources in addition to the WVS, such as the International Social Survey Programme and the Gallup Millennium Survey. In this study, variables are kept within a certain standard, with the advantages and disadvantages of sticking to a single source. A maximum of 108 countries are included in the analysis, compared to 68 countries in McCleary and Barro's 2006 study. The main determinant of sample size is the measure of religiosity. The variables for religiosity, including Belief in Hell, Belief in Heaven, Belief in After-Life, Belief in God, Religious Person, Weekly Participation, Monthly Participation, are coded as 0-1. On the other hand, the Importance of God is evaluated on a scale of 1-10, where 10 represents "very important" and 1 represents "not at all important". And, Importance of Religion is rated on a 1-4 scale, with 1 indicating "not at all important" and 4 indicating "very important".

The widely used form of the Herfindahl index (Herfindahl,1950; Hirschman, 1945) is utilized to calculate the measure of religious pluralism. The Herfindahl index $\sum s_i^2$ shows how religions are concentrated in the religious market, where s_i is the fraction of a particular religious group within a country. The religious pluralism index $1 - \sum s_i^2$, on the other hand, shows the degree of religious diversity in a country. The data on religious adherents within countries come from the World Religion Database (Johnson & Grim, 2022) through the Association of Religion Data Archives [The ARDA] (2023). Only the major adherent groups within a country are used to calculate the index. The proportions of religious adherents in the country are not used as separate variables, unlike McCleary and Barro (2006), because the relevant information on adherence is already incorporated into the religious pluralism index.

For state-related variables, McCleary and Barro (2006) use country table data from Barrett, Kurian, and Johnson (2001, pp. 834-835). Barrett et al. (2001) classify state religion or philosophy into 19 categories. A state that designates a particular religion in its constitution and oppresses and prohibits those who do not practice that religion is considered to have a state religion. The state may give preferential treatment to a particular religious group through subsidies, tax system privileges, and educational system privileges, even if it does not constitutionally have an official religion. The data on state religion for the year 2000 in this study are derived from the same source. The variable is coded as 0 if the state religion is atheist or secular, and as 1 otherwise.

McCleary and Barro (2006) use a state regulation variable that takes into account whether the government appoints or approves the appointment of the religious leader. In this study, the RAS variable "Regulation of and restrictions on the majority religion or all religions" is utilized as the measure of state regulation, which provides more detailed information about state regulation beyond the appointment of religious officials (Fox, 2017). It brings together data from 29 distinct categories of restrictions that a government could impose on the majority religion or all religions in the country.[2] In addition to religious adherence, dummy variables for the presence or absence of a communist government are not included in contrast to McCleary and Barro (2006). For, the state religion variable and the extended scope of state regulation variable provide sufficient information on the role of the state in the religion market.

McCleary and Barro (2006) focus on the relationship between economic development and religious beliefs and participation. To measure economic development, they used data for the log

[2] See (Fox, 2017) for further information. Wave 1 data from the WVS are not matched with data on state religion or regulation from the RAS. The second wave (1989-1993) is matched to 1990 RAS data due to data availability. But the subsequent waves are matched with the RAS dataset based on the beginning year of the wave.

of real per capita GDP. Similarly, data for the log of real per capita GDP from the Penn World Table (PWT) (Feenstra, Inklaar, & Timmer, 2015) are utilized in this study.[3]

Years of education, urbanization, life expectancy, and the percentage of young and old populations are included in this study as alternative measures of development in addition to the income variable of GDP per capita, as McCleary and Barro (2006) did. To this end, average years of total schooling variable is used to measure education level within country. For this variable, Barro and Lee's (2021) "Education Attainment for Population Aged 25-64" tables are utilized from their educational attainment dataset covering the period between 1950 and 2015. For life expectancy, urbanization rate, percentage of population aged over 65, and percentage of population aged under 15, World Development Indicators (WDI) DataBank (The World Bank, 2023) is used.

2.2.Method

The SUR model is used in the analyses, as McCleary and Barro (2006) have done. The SUR model was first proposed by Zellner (1962). The system of equations is called "seemingly unrelated" because the equations are related by possible correlations of unobserved disturbances (Greene, 2018). It is a generalized form of linear regression that includes more than one equation with its own dependent and independent variables. Each regression equation in the system can be estimated separately. However, because the error terms of the equations are assumed to be correlated, they are estimated simultaneously. For Zellner (1962), the estimators of the SUR method are asymptotically more efficient than the estimators computed in an equation-by-equation setting. The efficiency is large when the error terms of the equations are highly correlated. When the error terms are uncorrelated, the estimates are equivalent to OLS estimates. Another situation in which OLS and SUR estimates are equivalent is when the independent variables are the same across equations.[4]

$$y_{ip} = X_i\beta_i + \varepsilon_{ip},\ i = 1, \dots, N; p = 1, \dots, P \tag{1}$$

where i is the equation number, and p is the observation.

$$\begin{pmatrix} y_1 \\ y_2 \\ \vdots \\ y_N \end{pmatrix} = \begin{pmatrix} X_1 & 0 & \cdots & 0 \\ 0 & X_2 & \vdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & X_N \end{pmatrix} \begin{pmatrix} \beta_1 \\ \beta_2 \\ \vdots \\ \beta_N \end{pmatrix} + \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \vdots \\ \varepsilon_N \end{pmatrix} = X\beta + \varepsilon \tag{2}$$

The assumption here is that the ε_{ip} are independent between observations within an equation, and there is a potential for correlation between observations across the equations, so there is cross-sectional dependence. That is $\mathrm{E}[\varepsilon_{ip}\varepsilon_{ir}|X] = 0\ if\ p \neq r$, and $\mathrm{E}[\varepsilon_{ip}\varepsilon_{jp}|X] = \sigma_{ij}$.

3.Empirical Findings for the Base Model

The base model presented in Table 1 is a replication of the base model proposed by McCleary and Barro (2006), with the modifications outlined in the data section. Their study covers the period between 1981 and 2000, while the base model in this study covers the period between 1989 and 2004. In each system, the data are from the second (1989-1993), third (1994-1998) and fourth (1999-2004) waves of the WVS. Table 1 shows that from 1989 to 2004, economic development, as measured by the logarithm of per capita GDP, had a negative correlation with all aspects of religiosity except for self-assessment of religiosity in a sample consisting mostly of Christian and Muslim countries. As economic development increases, not only do religious beliefs about hell,

[3] The variable from PWT utilized is "output-side real GDP at chained purchasing power parities (PPP) (in mil. 2017 US$) per capita" (University of Groningen, 2023).

[4] Even in cases where identical regressors with same numerical values, SUR can be used because it allows for cross-equation constraint tests. But the use of OLS is still sufficient for efficiency (Baum, 2006, pp. 237-242).

heaven, and after-life erode, but also the importance of God and the place of religion in people's lives declines. Participation in religious services decreases.

Consistent with the religion market model, the presence of a state religion creates a religious monopoly in the market and reduces competition. That is, the presence of an official state religion is also negatively associated with all aspects of religiosity, as is economic development. Although there is a decline in religiosity across all dimensions, the decline in the importance of God or religion is less than the decline in beliefs about life after death, hell and heaven, or attendance at religious services. On the other hand, an almost complete set of positive relationships is found between state regulation of religion and religiosity, as opposed to state religion. The statistical significance of the negative coefficients on weekly attendance and importance of religion is valid only at 5% and 10%, respectively. On the other hand, excessive regulation of the religious market could discourage people from participating frequently in religious activities, leading to a lack of religious fulfillment. As a result, they may not consider themselves religious.

It is possible that the positive association is due to the use of a comprehensive list of criteria for state regulation. As in China or the post-Soviet countries, not only state regulation but also regulation of social life in general can be found high. It is unlikely that people's religious orientation will increase in these societies, some of which are already in a dystopian future. But in societies such as Iran, Egypt, Myanmar, Saudi Arabia, Yemen, where state regulation is high and the state not only appoints or approves the appointment of clergy, but also regulates religion in politics, institutions, education and daily life, people may want to hide themselves among the majority with high religious orientation. In societies where one religion is favored over others and is highly regulated, people may respond to questions about religion in surveys by attributing more importance to them than they actually do.

Norris and Inglehart (2004, pp. 230-231) argue, based on their WVS study, that in poor countries where religion is the foundation of social life, leaders often control or support religious institutions to maintain their authority and legitimacy. Religious participation and belief in God are most prevalent in societies with relatively homogeneous religious cultures and high levels of state regulation of religion. Moreover, increasing religious pluralism escalates competition in the religion market as people have more choices. It is expected to lead to a decline in religious belief and participation in religious ceremonies. The results in Table 1 confirm these expectations and suggest that religiosity is negatively associated with religious pluralism.

Table 2 presents the results of the extension of McCleary and Barro (2006). The table excludes state-related control variables and religious pluralism, although they are included in the regression. Instead, it focuses only on estimates for additional development variables. Five additional variables are included in addition to the GDP variable, in line with the analyses of McCleary and Barro. These variables are years of education, mortality (measured by the inverse of life expectancy), urbanization rate, share of population over 65, and share of population under 15.

Except in the systems where weekly attendance at religious services and self-reported religiosity are the dependent variables, the education coefficients are positive and statistically significant. Therefore, the negative sign of the GDP variable cannot be attributed to education. The results support the positive relationship between religious belief and education reported in McCleary and Barro's (2006) study.

Education may have a positive effect on religiosity, especially in authoritarian regimes or in societies where there is overregulation or where the only option is religious or religiously oriented education. However, it may not encourage participation in religious activities often enough to attend weekly. Individuals may or may not feel religious because they feel compelled or obligated to participate.

Table 1: *Determinants of Religiosity-SUR Estimates (2nd-4th Waves of the WVS)*

Explanatory Variable	(1) Belief in Hell	(2) Belief in Heaven	(3) Belief in After-Life	(4) Belief in God	(5) Religious Person	(6) Importance of God	(7) Weekly Participation	(8) Monthly Participation	(9) Importance of Religion
Log of per capita GDP	-20.236***	-10.130***	-9.131***	-11.901***	1.138	-21.386***	-12.745***	-10.247***	-7.205***
	(0.000)	(0.000)	(0.000)	(0.003)	(0.799)	(0.000)	(0.000)	(0.000)	(0.000)
State religion	-59.196***	-76.782***	-75.705***	-56.615***	-62.979***	-25.018***	-47.451***	-55.551***	-41.913***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
State regulation	0.949***	0.742***	0.799***	0.529*	0.809**	0.517***	-0.259**	0.108*	-0.145*
	(0.000)	(0.000)	(0.000)	(0.089)	(0.021)	(0.000)	(0.016)	(0.060)	(0.060)
Religious pluralism	-147.792***	-143.212***	-133.228***	-203.408***	-234.063***	-208.335***	-221.037***	-194.916***	-273.117***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	117	117	117	117	117	117	117	117	117

p-values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: PWT (Feenstra et al., 2015)**,** World Christian Encyclopedia (Barrett et al., 2001), RAS (Fox, 2017), WVS (Inglehart, et al., 2022)

The rate of urbanization, as an indicator of modernization, is negatively associated with all aspects of religiosity, including belief in afterlife, belief in God, and the importance of God or religion in life. There is also a negative association with attendance at religious ceremonies. This suggests that the increasing availability of alternative activities in urban life may contribute to the decline in religious belief.

A higher percentage of children in the population is associated with higher levels of religiosity and greater attendance at religious services. In addition, a higher mortality rate is significantly and positively associated with religiosity and religious attendance. Conversely, higher life expectancy at birth is negatively associated with religiosity. In contrast to the findings on attendance, McCleary and Barro (2006) found no clear relationship with belief.

The percentage of the population over the age of 65 is negatively related to belief, attendance, and religiousness, according to McCleary and Barro (2006). They only provide statistical analyses that contradict their expectations without any justification. However, the study by Norris and Inglehart (2004) suggests that secularization and human development have a negative impact on fertility rates. They find that in highly industrialized countries, where secularization is most intense, the fertility rate is far below the UN's replacement fertility level of 2.1 children per woman (United Nations Population Division, 2022).[5] Not surprisingly, an increase in the proportion of young people in the population is positively correlated with religiosity, while an aging population is negatively correlated with religiosity.

Bruce (2011) claims that the population, especially in Western Europe, is aging. If there were a situation where people became more religious as they got older, then the power of the churches would not be declining. He also claims that longitudinal studies of people over a lifetime show no evidence of becoming more religious. And the results of survey questions asking whether respondents' attendance at church meetings has changed compared to their routine show no evidence of change (Bruce, 2011, pp. 17-18), at least in societies where Christian adherence is high.

The relationship between economic growth and religiosity, especially active participation in religious ceremonies, is negative in Table 2. A closer look at the complex structure of development reveals that the negative relationship is not homogeneous across factors such as education, urbanization, and age demographics. But the results broadly support Barro's findings. The driving forces in the secularization process are urbanization, population aging, and life expectancy.[6]

[5] In 2021, the average fertility rate for The Organization for Economic Cooperation and Development [OECD] (2024) countries was 1.58 children per woman. The rate was slightly lower in high-income countries at 1.55, and it fell further to 1.52 children per woman in the European Union (The World Bank, 2024). In societies where traditional religious tendencies are dominant, the fertility rate is two or even three times the replacement level. These societies account for a significant proportion of the world's population. The average in low-income countries in 2021 was 4.62 children per woman (The World Bank, 2024).

[6] It is not preferred to replicate this analysis with an extended dataset in the remainder of the study to avoid potential multicollinearity problems unlike McCleary and Barro (2006).

Table 2: *Determinants of Religiosity: Additional Development Indicators-SUR Estimates (2nd-4th Waves of the WVS)*[7]

Explanatory Variable	(1) Belief in Hell	(2) Belief in Heaven	(3) Belief in After-Life	(4) Belief in God	(5) Religious Person	(6) Importance of God	(7) Weekly Participation	(8) Monthly Participation	(9) Importance of Religion
Log of per capita GDP	-19.486***	-12.054***	-8.603***	-13.167***	-8.421*	-27.991***	-9.198***	-5.868***	-2.897**
	(0.000)	(0.000)	(0.000)	(0.005)	(0.080)	(0.000)	(0.000)	(0.000)	(0.029)
Years of education	0.243***	0.182***	0.186***	0.167**	-0.024	0.204***	0.022	0.046***	0.051***
	(0.000)	(0.000)	(0.000)	(0.021)	(0.745)	(0.000)	(0.447)	(0.004)	(0.001)
1/(life expectancy)	80.947***	57.845***	40.461***	61.538*	157.495***	128.662***	118.211***	166.706***	106.538***
	(0.000)	(0.001)	(0.009)	(0.085)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Urbanization rate	-0.358***	-0.128***	-0.123***	-0.193***	-0.198***	-0.134***	-0.134***	-0.052***	-0.131***
	(0.000)	(0.002)	(0.000)	(0.007)	(0.008)	(0.000)	(0.000)	(0.008)	(0.000)
Population share > age 65	-0.466***	-0.312***	-0.343***	-0.303***	-0.444***	-0.064**	-0.595***	-0.396***	-0.614***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.028)	(0.000)	(0.000)	(0.000)
Population share < age 15	0.560***	0.428***	0.436***	0.616***	0.960***	0.741***	0.960***	0.913***	0.821***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	117	117	117	117	117	117	117	117	117

p-values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: PWT (Feenstra et al., 2015)**,** World Christian Encyclopedia (Barrett et al., 2001), RAS (Fox, 2017), WVS (Inglehart, et al., 2022), Education Attainment Dataset (Barro & Lee, 2021), World Development Indicators DataBank (The World Bank, 2023)

[7] Table 2 excludes state-related control variables and religious pluralism, but they are included in the regression.

Table 3 replicates the base model used in Table 1 with a larger data set. Table 1 contains data from 1989 to 2004, while Table 3 shows the extended results of the analysis from 1989 to 2022. The results of the study remain valid over a longer period of time. The importance of God and religion, self-reported religiosity, and attendance at religious services are negatively correlated with GDP per capita. In addition, the presence of a state religion or policies favoring a particular religion are negatively associated with religiosity, while state regulation is positively associated with religiosity, as previously observed. The data show a positive relationship between state regulation of religion and religiosity, as well as weekly and monthly attendance at religious ceremonies. In addition, religious pluralism is negatively associated with all aspects of religiosity and attendance at religious services.

Table 3: *Determinants of Religiosity-SUR Estimates (2nd-7th Waves of the WVS)*

	(1)	(2)	(3)	(4)	(5)
Exp. Variable	Religious Person	Importance of God	Weekly Participation	Monthly Participation	Importance of Religion
Log of per capita GDP	-10.969***	-13.088***	-15.337***	-18.465***	-15.525***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
State religion	-45.310***	-34.823***	-37.649***	-40.074***	-33.919***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
State regulation	0.959***	1.788***	1.570***	2.281***	2.697***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Religious pluralism	-90.035***	-174.300***	-131.309***	-131.328***	-226.126***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	299	299	299	299	299

p-values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: PWT (Feenstra et al., 2015), World Christian Encyclopedia (Barrett et al., 2001), RAS (Fox, 2017), WVS (Inglehart, et al., 2022)

Note: The 5th and 6th waves of the WVS do not include questions about belief in heaven, hell, life after death, and belief in God. Questions about heaven and life after death are also not included in the 6th wave. To preserve the data from the 5th and 6th waves, five main variables are analyzed in the extended dataset: Religious Person, Importance of God, Weekly Participation, Monthly Participation, and Importance of Religion listed in Table 3.

4.Conclusion

The process of modernization has significantly transformed religiosity worldwide. Religious beliefs adapt to meet new needs as societies change, resulting in changes in daily practices and religious institutions. The presence of a state religion and state regulation can impact religious adherence, even though economic prosperity often leads to a decrease in religiosity. Research has definitively indicated that religious diversity and different types of liberties, such as religious freedom, are linked to decreased levels of religiosity. As societies progress, individuals prioritize secular institutions over religious authority, seeking fulfillment through worldly pursuits rather than traditional religious practices. The impact of modernization varies across different regions and socio-economic contexts, leading to cultural, social, and economic divergence or convergence. These findings highlight the complex relationship between modernization and religious dynamics.

Industrialization and economic development drive secularization, a hallmark of Western modernization. This historical process has led to the emergence of institutional and democratic structures that shape religious beliefs. Religion adapts to meet the needs of individuals in modernized societies, altering both religious practices and the religion itself. Religious beliefs have rapidly evolved in industrialized regions such as the United States and Western Europe. In Latin America, the shift from Catholicism to Protestantism is often seen as a quest for a new religious identity. In

sub-Saharan Africa, Pentecostalism is embraced as a means of integrating into the capitalist world system and promoting entrepreneurship.

This study partially replicates McCleary and Barro's (2006) research and confirms a negative correlation between religiosity and economic affluence, as measured by per capita GDP, using survey data from 1989 to 2022. Furthermore, it provides additional support for the religion market model, which shows a strong negative correlation between religiosity and the presence of a state religion. The study also finds a positive association between religiosity and state regulation. These findings demonstrate a high level of confidence in the relationship between religiosity and economic factors, as well as the impact of state regulation on religiosity. The study confidently indicates that religious pluralism negatively correlates with overall religiosity, demonstrating that increased diversity leads to decreased religiosity. This underscores the competitive nature of the religion market, where diverse options reduce the dominance of any single religious belief system. Norris and Inglehart (2004, p. 71) assert that economic development alone is inadequate to guarantee societal safety and secularization. In societies with high levels of economic development but also high levels of economic inequality, increased prosperity may not necessarily result in secularization. However, once a society is lifted out of poverty and freed from external threats to life, it becomes less dependent on the metaphysical world as a savior. As individuals achieve greater financial and social security, their curiosity about the world tends to expand. However, the connection between economic development and religiosity remains uncertain. But economic prosperity and religiosity have a negative correlation.

The most significant limitation of the study is that countries are not weighted according to their population in the analysis. Nevertheless, the results of the study are valuable in demonstrating the general levels of religiosity in countries included in the analysis and the factors affecting them. In future studies, evaluating the effects of countries on the whole sample according to their population might be a valuable extension in this respect. Another limitation of the study is the potential multicollinearity problem between economic growth and development indicators, as was the case in McCleary and Barro's (2006) study. To address this, future extensions of this study would include separate regressions for different dimensions of development and examine those development indicators in more depth. It is possible that the impact of secularization is not homogeneous in different regions of the world. Consequently, another notable extension of the study would be to classify countries according to their religious adherence and to compare the situation in different country groups with different religious beliefs.

In conclusion, the multifaceted and complex nature of this relationship is evident, as economic development is just one aspect of modernization among many. Education and mortality rate are two distinct indicators of development, and they are generally positively correlated with religiosity. However, the relationship between development indicators and religiosity is not uniform. This is indicated by the negative correlation between urbanization and the aforementioned indicators. The negative relationship between religiosity and the proportion of the elderly population in the total population, and the positive association between religiosity and the population share of young people, are unexpected findings. In light of these findings, future studies need to elucidate the relationship between the concept of religiosity and not only economic growth and development, but also other dimensions of modernization. Institutional factors such as globalization, governance quality, freedom, and human rights also play a significant role in shaping religious beliefs and practices. As societies continue to evolve, individuals are increasingly prioritizing secular institutions over traditional religious authority. The impact of modernization on religiosity varies across different regions and socio-economic contexts, resulting in diverse outcomes. Future research will continue exploring these dynamics, taking into account the interplay of various factors and their implications for religious identity and practice. An enhanced comprehension of the interrelationship between modernization and religiosity would facilitate the development of effective strategies to address challenges and capitalize on opportunities in an increasingly interconnected world.

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