Religiosity of the Rich and Poor and Escape Theory: Cross-Country Evidence

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Abstract: *This study attempts to explore the relevance of secularisation theory and its relationship with escape theory, by examining the probable quadratic nature of the relationship between income and religiosity beyond individual data. This research reveals that cross-country data on the measurements of income and religiosity across 105 countries only weakly supports this quadratic relationship. Although an exceptional case can be made for very rich countries, the explanatory power of secularisation theory is not diminished in explaining the relationship between income and religiosity in rich and poor countries, whereby religiosity declines in the presence of increased income. In examining the relationship between income and religiosity at an aggregate level, this study employs three different sets of econometric models, with each set using different dependent variables as a proxy of religiosity. As for independent variables, in addition to income and quadratic terms of income, several other variables were included in regressions as control variables. Results from estimations reveal consistent findings, in which religiosity decreases with decreasing income to a certain point, then begins to increase with increasing income. This finding supports the study hypothesis that escape theory does apply for both the poor and rich.*

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1.   Introduction

By defining religion as "beliefs, actions, and institutions" (Bruce, 2011), secularisation can be defined as a process through which a society shifts from a strong association with religious institutions and ideals to nonreligious principles and secular institutions. The secularisation thesis emphasises the view that religious authority declines in all spheres of social life and government as nations evolve, notably via modernity, rationality, and breakthroughs in science and technology.

Secularisation thus constitutes the decline of religious institutions; the displacement of religious principles and regulations in concerns of behaviour; governmental sequestration of religious organisations' assets and facilities; the substitution of an empirical, logical, and instrumental perspective for religious consciousness; the transition of social activities and functions from religion to secular control; and the decrease in the amount of money that people spend on paranormal issues (Bruce, 2011; Wilson, 1982).

Secularisation theory is long-standing, despite having been challenged, and continues to suggest that religiosity declines with increasing income (Inglehart, 2020). Prior to that, however, many of the world's richest people were found to be religiously affiliated (New World Health, as cited in Frank, 2015), suggesting that the relationship between income and religiosity is not necessarily linear. Some theories describe the religiosity of the poor as an escape from the hardship caused by low economic status, completely neglecting the arguments of the authenticity of religion. But could the very rich also possibly have an escape? The study above generally approaches the issue by considering the relationship between certain measures of religiosity and individual income. The authors are aware that attempts to explore the relevance of the secularisation theory and its relationship with the escape theory by examining the probable quadratic nature of the relationship between income and religiosity beyond individual data runs a risk of simplification. Other factors may come into play, and the relationship between the cross-sectional, time series, and even panel evidence could lead to different discoveries.

Secularisation theory predicts that development leads to a lower level of religiosity. As development increases income and eradicates poverty, the demand for religion declines. According to this view, as pioneered since the late 19th century, the need for religion among the poor is an escape from the

deprivation and being of lower-class. It offers an escape from their fear of life's challenges (Freud, 1927). In the words of Karl Marx, religion is "the opium of the people" (Marx, 1970).

Inglehart's secularisation theory claims a negative relationship between existential threats and religiosity. However, this is challenged by the fertility rate, in which only modern and technologically advanced Western countries, like the Nordic countries and the United States, exhibit a replacement level below the normal rate, presenting evidence of religious decline (Inglehart, 2020). On the other hand, in other countries, especially Muslim-majority countries, religion remains stable. The argument that religiosity declines as countries achieve an increased income and a higher level of security against potential life challenges has received empirical support from several prior studies (Barber, 2011; Herzer & Strulik, 2017). For instance, Herzer and Strulik (2017) find a bi-directional and causal relationship between income and religiosity, where increased income causes a decline in religiosity (and vice versa), by country.

In a comprehensive review of the correlation between religion and social status, Ellis et al. (2018) find mixed evidence on the correlation between religiosity and income or wealth. The suggested reason for these mixed findings is that these studies employ different measures of religiosity. However, another possible reason is that the relationship between religiosity and income is not linear. Assuming that it might lead to conflicting outcomes depending on, among others, the income levels used in each study. The above study suggests that the relationship between religiosity and income may not necessarily be linear, where increased income will always result in lower religiosity. Rather, religiosity could be hypothesised to decrease with increased income only to a certain threshold, thereafter, increasing with increasing income. In other words, the relationship between religiosity and income is likely quadratic, taking a U-shape. While individual data might support the non-linearity form of income and religiosity, this is yet to be proven by aggregate data.

The objective of this study therefore is to examine the religiosity-income nexus by employing cross-country data from 105 countries on the measurements of their income and religiosity. We present a discussion on religion for the rich and escape theory, followed by the materials and methods of the study, the results and discussion, limitations, and finally, the conclusion of the study.

The implementation of this study is motivated by the need to understand religious behaviours of people, not only at individual level, but also at an aggregate level. Many countries around the world allocate huge sums of money on religion-related matters or programmes for clear objectives. Religion as a tool to shape moral and ethical values across different societies and cultures provides a framework for understanding right and wrong, and for defining what is considered acceptable behaviour (Collegenp, 2023). From the perspective of a country, developing social integration and cooperation among its residents is imperative. As religious people are found to be more prosocial (Shariff, 2015), having a large portion of the population who are not religious may lead to less integrated communities within the country. Studying the potential relationship between income and religiosity is an approach of looking at how different segments of people within a country characterised by different levels of income are adopting religion-guided rules of life.

2.   Religion for the Rich and Escape Theory

The escape theory, which refers to "the tendency for people to engage in behaviours to avoid an unpleasant psychological reaction" (Baumeister et al., 2007), provides a psychological basis for the proponents of the secularisation hypothesis. This could also help explain why the very rich might be more religious than those who are in the middle. In other words, religiosity could be the 'opium for the rich' as well, and not only for the poor. But what might the rich be escaping from? We will discuss some Hobbesian and Rousseauian ideas below to help understand their escape.

Neumayer (2003) studies the relationship between income and suicide rates at the country level and finds that "higher income levels first lower the suicide rate, but at a decreasing rate, and then raise the suicide rate after a certain income level has been reached." When per capita income exceeds USD30,700, Neumayer (2003) concludes that higher income levels are associated with higher suicide rates. In other words, suicide is higher among the poor and the very rich compared to those in the middle. In line with that, Luthar and Latendresse (2005) conclude that children of the affluent are subjected to several psychological risks as a result of excessive pressure to achieve expectations and the physical and emotional isolation from their parents.

For the rich, religion might offer an escape from various types of mental illnesses that lead to a higher risk of committing suicide. Suicide, which "is often an escape from the self" (Baumeister, 1990), is evidently lower at higher levels of religiosity (Clarke et al., 2003). As Pajević et al. (2005) argue:

> *It [religion] corrects tendencies towards psychopathic and paranoid behaviour, reduces converse, depressive and schizoid tendency, and provides successful overcome of emotional conflicts…[it] provide[s] a clear life orientation, solid basis and safe frames for personality development, assuring human to be continually on the way to achieve its own generic essence and reach its own maturity and self-actualisation.*

While evidence at the individual level might hold true, evidence at an aggregate level might tell another story. Hence, this paper attempts to explore such possibility.

Hobbesians believe that in times of extreme and fierce violence, rational beings know of the chances to continue living by consenting to Leviathan (a strong state), thus escaping from the fear of death (Hobbes, 2008). Taking a cue from Hobbes' maxim, when approaching death, rational beings who know that the chance to stay alive is no longer present would consent to religion, escaping from the fear of potential punishment in the afterlife; this applies to both the rich and poor. From Jean-Jacques Rousseau (1985), we learn that refusing to live a simple life and continuously making attempts to achieve self-imposed values would make our lives intensely painful. Therefore, people tend to escape by suicide, and those who do not escape the intense pressure turn to religion. In short, Hobbes' escape theory from the fear of death and Rousseau's theory of people's refusal to live a simple life are the reasons the rich are more likely to stay religious; such is the postulation of religion being "the opium for the rich" as seen from the lens of New Marxists.

3. Materials and Methods

3.1 Measurements of religiosity

This research is based on the indicators of religious commitment from the Pew Research Center (2018), using survey data collected from 105 countries, primarily between 2011 and 2015. The indicators are as follows: importance of religion, or the percentage of people stating that religion is highly important; weekly attendance, or the percentage of people stating that they attend religious services every week; and daily prayer, or the percentage of people stating that they perform daily prayers.

3.2 Control variables

3.2.1 Income inequality

Income inequality concerns how a country's overall income is distributed across different strata of the population. An increase in gross domestic product accompanied by high inequality may lead to the rich getting richer, and the poor poorer. As our dual escape hypotheses predict, this would lead to higher religiosity rates. In countries with more equal income distribution, however, the bulk of the same increase in GDP, perhaps accompanied by higher taxes, would go to help low-income people break out of poverty. Hence, in countries with low levels of income inequality, an increase in income may lead to a decrease in religiosity. Therefore, in testing our hypothesis, it is important to control for income inequality. Agreeing with the dual escape hypothesis, Barber (2011) finds that income inequality, measured by the Gini coefficient, is associated with significantly lower atheism rates in 137 countries. In other words, a more equal distribution of a country's income is associated with lower levels of religiosity.

3.2.2 Education

It is occasionally argued that as people become better educated, they become less religious, based on the assumption that educated people are more scientific and have less tendency to believe in metaphysical explanations of the world (Barro & McCleary, 2003). However, previous findings regarding

the effect of education on religiosity are complex. The pioneering work of Barro and McCleary (2003) reveals that education has both negative and positive effects on religiosity, with the effect depending on the specification of the model. One study provides evidence on the positive relationship between education and religiosity (Rachmatullah et al., 2019). We also can refer to other studies that indicate the presence of a relationship between education and the adoption of religion-related products or services. For instance, Ahmed et al. (2021) finds that those who receive tertiary level education have a better attitude towards Islamic microfinance services compared to those with lower levels of education.

It is worthy to note in our discussion here that when Barro and McCleary (2003) include education in their regression, the income variable (GDP) is insignificant. In a follow up study, Barro and McCleary (2006) do not include education as a determinant of religion. Herzer and Strulik (2017) find that education has a negative effect on religiosity, but their regressions do not control for national income. In contrast, Glaeser and Sacerdote (2008) find that education has a positive effect on religiosity. These contradictory results likely reflect the fact that income captures the bulk of the effect of education on religiosity (Barro & McCleary 2003). In fact, income and education are highly correlated variables; most models that include income likely control the education variable.

3.2.3 Communist governments

Communist countries have significantly lower levels of religiosity compared to their counterparts. Some of these countries have policies to eradicate religions, which is seen to compete with communism (Barro & McCleary, 2003; Barro & McCleary 2006; Barber, 2011). In our analysis, we use a dummy variable to control for the four contemporaries' communist countries in the sample: China, Cuba, Laos, and Vietnam.

3.2.4 Islam

Islam regards apostasy as a capital offense. According to Islamic law, a Muslim who changes his or her religion or becomes an atheist faces capital punishment. Although not in practice in many Muslim countries, this potentially severe punishment influences people's belief and practice of the

religion (Barro & McCleary, 2003; Barro & McCleary, 2006; Barber, 2011; Cottee, 2015). In this study, we controlled for Islam using the percentage of Muslims in each country's overall population.

3.3   Measurement of independent variables

Table 1 presents the independent variables and their measurements and sources. Income data were retrieved from the World Development Indicators database of the World Bank (2019), as were data on income inequality and education. GDP per capita is used as a proxy for income, as it measures per capita income. Education is measured by gross tertiary school enrolment. It is calculated by taking the ratio between total enrolment, regardless of age, and the population of the age group that officially corresponds to the tertiary education level. Thus, it is possible to have a ratio that is greater than 100%. Inequality is measured by the Gini coefficient, which originally ranges from 0 to 1. However, we transformed this coefficient to range from 0 to 100, to illustrate more fine-grained results. Data on the fraction of Muslims in each country are 2010 estimates from the Pew Research Center (2015) dataset. The communist countries of China, Cuba, Laos and Vietnam (CIA, 2020) are assigned a dummy variable.

Table 1: Independent Variables, Measurements, and Sources

Variable	Measurement	Period(s)	Source
Income	Per capita GDP (thousands, constant 2011 USD, PPP)*	2011–2015	World Bank (2019)
Income inequality	Gini coefficient (ranges from 0–100)*	2011–2015	World Bank (2019)
Education	Tertiary school enrolment (% gross)*	2011–2015	World Bank (2019)
Muslims	% of population	2010	Pew Research Center (2015)
Communist country^	Dummy (1: communist, 0: otherwise)	2011–2015	CIA (2020)

3.4   Models and statistical analyses

As previously mentioned, this study relies on cross-sectional data regarding three indicators of religious commitment from the Pew Research Center:

importance of religion, daily prayer, and weekly attendance. For each of these three indicators, multivariate ordinary least squares (OLS) regression was used to examine the study hypothesis. This study intends to prove that the relationship between income and religiosity is non-linear, represented by a U-shaped connection between the two variables.

The non-linearity of the religiosity-income relationship can be examined by adding a quadratic term of income. It replicates a similar model used by Barro (1996) in examining the non-linear relationship between democracy index and growth rate of real per capita GDP. For simplicity, in the following models, we use the term 'religiosity' to refer to all dependent variables presented in Section 3.1.

$$Religiosity = \ a_0 \ + a_1 Income + a_2 Income^2 + Controls + error \qquad (1)$$

The turning point wherein the relationship between religiosity and income turns from phase I to II can be derived from the first order condition as follows:

$$\frac{d \ Religiosity}{d \ Income} = a_1 + 2a_2 * Income = 0$$

$$Income = \frac{1}{2} * \frac{-a_1}{a_2} \quad , \quad a_2 \neq 0$$

Where the dependent variables measure religious commitment (i.e. the three indicators from the Pew dataset). The study hypothesis is true if both a_1 and a_2 are significant, with $a_1 < 0$ and $a_2 > 0$.

4.   Results and Discussion

Table 2 presents descriptive statistics of the study variables. The lowest religious commitment is in China, with only 1% of performing prayers daily or attending religious service on a weekly basis; only 3% consider religion to be a very important aspect of their lives. At the other extreme, Nigeria (89% attend a religious service weekly), Afghanistan (96% pray daily), and Senegal (98% consider religion very important) have the strongest religious commitment across the 105 studied countries.

Table 2: Descriptive Statistics

	N	Mean	Std. Dev.	Min.	Max.
Importance of religion	105	54.048	31.151	3.000 [China]	98.000 [Senegal]
Pray daily	104	48.990	27.313	1.000 [China]	96.000 [Afghanistan]
Attend weekly	101	38.366	27.039	1.000 [China]	89.000 [Nigeria]
Income	105	17.326	14.872	0.745 [Congo, D.R.]	63.098 [Norway]
Communist	105	0.019	0.137	0.000	1.000*
Inequality	94	37.606	8.175	24.680 [Ukraine]	63.000 [South Africa]
Muslim	105	27.225	38.258	0.001 ^	99.900 [Morocco]
Education	95	45.437	29.089	2.241 [Niger]	119.695 [Australia]

Notes: *China, Cuba, Laos, and Vietnam. ^ 23 countries have 0.001% Muslim population.

A correlation matrix of the studied variables is shown in Table 3. The three measures of religious commitment are highly correlated ($r > 0.84$). Except for income and education, correlations across the independent variables range from very weak to moderate ($r < 0.5$). Unsurprisingly, income and education have a considerably strong correlation ($r = 0.774$), but not strong enough to signify a serious multicollinearity issue in the regression model. This is indicated by low variance inflation factor (VIF) values in the models that include both income and education as independent variables.

Table 3: Pearson Correlation Matrix

	Importance of religion	Pray daily	Attend weekly	Income	Communist	Inequality	Muslim
Pray daily	0.931						
	(0.000)						
Attend weekly	0.903	0.842					
	(0.000)	(0.000)					
Income	-0.727	-0.671	-0.654				
	(0.000)	(0.000)	(0.000)				
Communist	-0.196	-0.214	-0.139	-0.083			
	(0.045)	(0.029)	(0.166)	(0.400)			

	Importance of religion	Pray daily	Attend weekly	Income	Communist	Inequality	Muslim
Inequality	0.567	0.534	0.568	-0.391	0.004		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.973)		
Muslim	0.384	0.425	0.287	-0.388	-0.096	-0.204	
	(0.000)	(0.000)	(0.004)	(0.000)	(0.330)	(0.048)	
Education	-0.732	-0.681	-0.761	0.774	-0.076	-0.430	-0.438
	(0.000)	(0.000)	(0.000)	(0.000)	(0.467)	(0.000)	(0.000)

Table 4 presents the results of the multivariate regressions, wherein the dependent variable is the importance of religion. There are nine different specifications of econometrics models used here, with each consisting of a different set of independent variables. With exception to the regression in Column 7, all regressions either include income or income and its quadratic term. The regression in Column 7 excludes income and includes all control variables. Religiosity decreases with decreasing income to a certain turning point, and then begins to increase with increasing income. This is depicted by the obtained negative value of the estimated regression coefficient for the income variable and positive value of the estimated regression coefficient for the income^2 variable. The inclusion of the linear form of the income variable into the regression (Column 8) improves the model's explanatory power (adjusted R^2) from 0.768 to 0.800, while including the quadratic term of income into the regression improves the adjusted R^2 to 0.827 (regression 6).

Noticeably, education becomes insignificant ($p = 0.12$) when including the non-linear term of income in the regression (Column 6). It is significant without the non-linear term of income (Column 8). However, the presence of the education variable in the model provides important explanatory power, improving the adjusted R^2 from 0.813 (regression 5) to 0.827 (regression 6). As mentioned above, the countries' levels of income and education are highly correlated. This implies that a large fraction of the effect of education on religiosity is captured by income in our model. Importantly, income in its quadratic form produces higher explanatory power than education, as can be seen from a comparison between regression 5 (adjusted R^2 = 0.813) wherein education is excluded and regression 7 (adjusted R^2 = 0.768) wherein income is excluded.

The last row of Table 4 presents the turning points at which the relationship between religiosity and income become positive instead of

negative. The turning point value can only be calculated for regressions that include the quadratic term of income. The calculation was done according to the derived formula given in Section 3.4. Regressions 5 (without education variable) and 6 (with full set of independent variables) indicate that this turning point is around USD41,000. In other words, when a country's income exceeds this threshold, higher income is associated with a higher fraction of the population reporting religion to be very important in their lives (i.e., positive relationship between income and religiosity). Meanwhile, below this level of income, the opposite holds true (negative relationship between income and religiosity).

Table 4: Determinants of Religiosity (Measured by 'Importance of Religion')

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Income	-1.522	-3.110	-3.000	-3.069	-2.685	-2.213	-	-0.587	-1.022
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	-	(0.000)	(0.000)
Income^2	-	0.032	0.035	0.035	0.033	0.027	-	-	-
	-	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	-	-	-
Inequality	-	-	1.273	1.234	1.622	1.524	1.514	1.358	1.645
	-	-	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Communist	-	-	-	-56.063	-48.501	-50.044	-47.658	-51.000	-47.409
	-	-	-	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Muslim	-	-	-	-	0.222	0.190	0.218	0.180	0.243
	-	-	-	-	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Education	-	-	-	-	-	-0.161	-0.595	-0.393	-
	-	-	-	-	-	(0.120)	(0.000)	(0.000)	-
Constant	80.417	91.114	39.328	43.095	17.572	24.245	18.909	26.979	4.173
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.024)	(0.118)	(0.020)	(0.705)
R^2	0.528	0.589	0.708	0.775	0.823	0.839	0.779	0.811	0.758
Adjusted R^2	0.523	0.581	0.698	0.765	0.813	0.827	0.768	0.800	0.748
Observations	105	105	94	94	94	87	87	87	94
Turning point	-	47.99	42.98	43.72	41.06	41.29	-	-	-

Notes: GDP = Gross national product. Parentheses denote p values. Multivariate OLS regressions.

Tables 5 and 6 present the results of regressions using weekly attendance and daily prayer as dependent variables, with findings that are similar to those presented in Table 4, all of which confirm the non-linear relationship between income and religiosity. The results presented in Tables 5 and 6

support the hypothesis that there is a non-linear relationship (given by a quadratic type of equation) between income and religiosity, even if different measures of religiosity are used in the estimating regression models. In other words, the use of different measures of religiosity providing similar outcomes shows the robustness of the findings and provides better reliability for the conclusion.

Interestingly, when measuring religiosity by weekly attendance of religious services, the turning point (around USD35,000, Table 5; Regressions 5 and 6) is significantly lower than when measuring religiosity by daily prayer (around USD45,000; Table 4; Regressions 5 and 6). In fact, daily prayer is a higher order of religious commitment compared to weekly attendance of religious services. Therefore, a higher level of income is required to turn the effect of income on performing daily prayer from negative to positive, compared to the level of income required for weekly attendance.

Data from high-income countries, such as the US, show a clear decline in religiosity over time, between 2007 and 2019 (Pew Research Center, 2019). Recalling the results of this research that indicate that religiosity has an upward trend at higher level of income, an important question is raised: why is religiosity declining in almost all rich countries, even while these countries continue to become richer? And why is religious practice much higher in the middle and upper-class communities in America (Murray, 2013; Carney, 2019)?

In fact, an accurate answer for the above question requires an individual-level analysis, which is beyond the scope of this current study that uses country-level data. However, a possible answer could be that rising national income might help more people break out of poverty and the low-income status, joining the middle-class ranks. This contributes to the decline of religiosity. However, this decline might be accompanied by an increase in religiosity, resulting from more people gaining very high income. If the decline in religiosity among the poor outnumbers the increase among the rich, an overall decline in religiosity would occur, and vice versa.

A suitable illustrative example in this context is Sweden, a rich country with one of the lowest levels of religiosity in the world. Most people in Sweden have a middle-income status, with income tax rates relatively high by global standards that expressly aim towards a policy of income redistribution and support a very generous social security system. The

majority of Swedes are, thus, neither poor, nor extremely rich. In fact, about 80% of Swedes earn between 60% and 200% of the median income, which stands around USD31,000 (Anxo, 2016).

Table 5: Determinants of Religiosity
(Measured by 'Weekly Attendance' of Religious Service)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Income	-1.189	-3.095	-2.855	-2.829	-2.567	-1.323	-	-0.152	-0.726
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	-	(0.307)	(0.000)
Income2	0.002	0.039	0.038	0.038	0.036	0.019	-	-	-
	-	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)	-	-	-
Inequality	-	-	1.128	1.138	1.400	1.123	1.055	1.012	1.449
	-	-	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Communist	-	-	-	-42.065	-38.583	-44.232	-46.319	-46.778	-41.362
	-	-	-	(0.006)	(0.008)	(0.001)	(0.001)	(0.001)	(0.015)
Muslim	-	-	-	-	0.147	0.093	0.097	0.087	0.172
	-	-	-	-	(0.003)	(0.048)	(0.043)	(0.075)	(0.003)
Education	-	-	-	-	-	-0.400	-0.616	-0.565	-
	-	-	-	-	-	(0.000)	(0.000)	(0.000)	-
Constant	59.219	72.357	25.494	25.499	8.277	26.454	25.656	27.907	-7.831
	(0.000)	(0.000)	(0.009)	(0.007)	(0.428)	(0.013)	(0.018)	(0.012)	(0.510)
R^2	0.427	0.545	0.677	0.705	0.734	0.800	0.777	0.780	0.626
Adjusted R^2	0.421	0.535	0.666	0.691	0.719	0.784	0.766	0.766	0.608
Observations	101	101	91	91	91	84	84	84	91
Turning point	-	40.19	37.27	37.72	35.75	34.27	-	-	-

Notes: Parentheses denote p values. Multivariate OLS regressions.

Table 6: Determinants of Religiosity (Measured by 'Praying Daily')

	[1]	[2]	[3]	[4]	[5]	[6]
Income	-1.233	-2.226	-2.120	-2.191	-1.805	-1.526
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)
Income^2	-	0.020	0.022	0.022	0.020	0.017
	-	(0.016)	(0.005)	(0.002)	(0.002)	(0.034)
Inequality	-	-	1.029	0.991	1.388	1.282
	-	-	(0.000)	(0.000)	(0.000)	(0.000)

	[1]	[2]	[3]	[4]	[5]	[6]
Communist	-	-	-	-51.206	-43.474	-44.686
	-	-	-	(0.000)	(0.000)	(0.000)
Muslim	-	-	-	-	0.228	0.195
	-	-	-	-	(0.000)	(0.000)
Education	-	-	-	-	-	-0.111
	-	-	-	-	-	(0.316)
Constant	70.540	77.321	34.382	38.015	11.958	18.514
	(0.000)	(0.000)	(0.002)	(0.000)	(0.258)	(0.108)
$R2$	0.450	0.481	0.588	0.663	0.731	0.750
Adjusted R^2	0.445	0.471	0.574	0.648	0.716	0.731
Observations	104	104	93	93	93	86
Turning point	-	55.10	47.96	48.91	44.90	45.69

Notes: Parentheses denote p values. Multivariate OLS regressions.

It is important to highlight that this study uses self-reported data on religiosity that could be influenced by social desirability (Shaver et al., 2021). This is that in some social contexts, people may desire to appear religious, and, thus, they may report higher or lower church attendance than their actual attendance (Hadaway & Marler, 2005; Shaver et al., 2021). To overcome this potential bias in self-reported data, Shaver et al. (2021) suggest that collection of unbiased data on religiosity could be done by third-party methods. However, such methods are very challenging, and some countries might face strong legal and ethical objections.

Bold examples of the bias in self-reported religiosity might be found in communist and Muslim countries, as discussed earlier in this research. People in communist countries live in a social context, where appearing religious is not desirable. On the other hand, in some Muslim countries, appearing to be non-religious might be strongly undesired or even risky. Our study controls for such potential bias by incorporating dummy variables for communist and Muslim countries. Like previous studies in this area (Barber, 2011), this study offers correlational evidence that does not necessary reflect causation. Establishing causal evidence requires time-variant data, a task deferred for future research.

Moreover, the study uses data at a country aggregate level, although with the application of data at the micro (individual) level provided by

the World Values Survey, the European Values Study, the European Social Survey, and the International Social Survey Programme, a solid argument that would support the conclusion of this current study could possibly be established. Collecting time-variant and individual data to overcome the limitations of this study would be the primary focus in future studies. The authors are also aware that such regression results (such as Barro's cross-country regressions) are extremely fragile, hence great care must be considered when continuing such analyses.

5. Conclusion

It has long been argued that as income increases, people become less religious. However, the data suggesting that most the world's richest people are religiously affiliated cannot be simply ignored (New World Wealth, as cited in Frank, 2015). A brief observation of global data on religiosity and income shows that becoming richer does not always mean becoming less religious.

This study offers findings on the relationship between income and religiosity, in which we demonstrated a nonlinear relationship between income and religiosity. Religiosity thus declines—at a decreasing rate—with increasing income. Once incomes reach a specific turning point, increased income, although with little evidence, is associated instead with an increase in religiosity. This suggests that income redistribution plays an adaptive role affecting a country's level of religiosity. In other words, higher income equality leads to larger middle-income groups and thus lower religiosity. Since religiosity is higher in poor countries compared to their rich counterparts, psychological theories have described religiosity as an escape from the fear and anxieties caused by a lower standard of living.

The present study suggests that not only the poor, but also the rich, escape to religion. While the poor seek escape from economic hardship, the rich may do so in search for the meaning of life away from the materialistic world. It is important to acknowledge that this study does not use individual-level data, but rather country-level data. Therefore, the conclusions of this study should be carefully interpreted, as what applies at a country level may not necessarily be valid at an individual level. One should also be aware that the trend of those who believe, but not belong to, certain religions, is also increasing, which implies that although they are not captured in this research,

it does not mean they are less religious (Wilkins-Laflamme, 2021).

Finally, we should state that the explanatory power of the secularisation theory is not at all diminished in the presence of the current findings. This is because the findings of this study provide strong evidence that the relationship between income and religiosity is curvilinear, especially for countries with a relatively low income. But it is also worthy to state that the data only weakly supports the conclusion that the relationship between income and religiosity turns from negative to positive once income reaches a certain value. This is because there are only a few countries that have income higher than the calculated turning points.

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Appendix

Table A: Sample of Countries (N = 105)

Afghanistan	Finland	Nicaragua
Albania	France	Niger
Algeria	Georgia	Nigeria
Argentina	Germany	Norway
Armenia	Ghana	Pakistan
Australia	Greece	Panama
Austria	Guatemala	Paraguay
Azerbaijan	Guinea-Bissau	Peru
Bangladesh	Honduras	Philippines
Belarus	Hungary	Poland
Belgium	India	Portugal
Bolivia	Indonesia	Puerto Rico
Bosnia and Herzegovina	Iran, Islamic Republic	Romania
Botswana	Iraq	Russian Federation
Brazil	Ireland	Rwanda
Bulgaria	Israel	Senegal
Burkina Faso	Italy	Serbia
Cameroon	Japan	Slovak Republic
Canada	Jordan	South Africa
Chad	Kazakhstan	Spain
Chile	Kenya	Sweden
China	Korea, Republic	Switzerland
Colombia	Kosovo	Tajikistan
Congo, Democratic Republic	Kyrgyz Republic	Tanzania
Costa Rica	Latvia	Tunisia
Croatia	Lebanon	Turkey
Czech Republic	Liberia	Uganda
Denmark	Lithuania	Ukraine
Djibouti	Malaysia	United Kingdom
Dominican Republic	Mali	United States
Ecuador	Mexico	Uruguay
Egypt, Arab Republic	Moldova	Uzbekistan
El Salvador	Morocco	Venezuela
Estonia	Mozambique	Vietnam