Happier Than Thou

Causal Evidence for the Effect of Religion on Subjective Well-Being

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Abstract

Does religion cause greater well-being, or do happier people tend to be more religious? While prior research documents a positive correlation between religiosity and subjective well-being (SWB), establishing causality has proved challenging due to the impossibility of randomizing religious belief. This paper leverages novel econometric methods that require weaker assumptions than traditional instrumental variables approaches to investigate the causal effect of religion on SWB. Using data from the World Values Survey across seven countries, we apply Monotone Instrumental Variables (MIV) and Monotone Treatment Selection (MTS) assumptions. While the MIV assumption alone yields uninformative bounds, combining it with MTS produces evidence of a positive causal effect of both religious belief and religious service attendance on life satisfaction. The estimated lower bounds on these causal effects are larger than conventional OLS estimates in most countries studied. These findings suggest that previous correlational studies may have understated rather than overstated religion's impact on well-being. Our results demonstrate the utility of these newer econometric techniques for questions where traditional causal inference methods face inherent limitations.

1   Introduction

Does adherence to religion increase individual well-being? Religion provides a way of life for billions of people around the world. Many of these people would claim that religion gives them strength and makes their lives better. In the academic literature, many studies have been written on the effect of religion on subjective well-being (SWB) as self reported in surveys. In general, these studies find a positive link between religion and SWB. Unfortunately, however, this evidence is correlational. The nature of this topic makes proof of causation using normal methods very difficult. Experiments cannot randomly assign religious beliefs and SWB research does not lend itself easily to traditional econometric techniques such as two state least squares (2SLS) estimation of instrumental variables (IVs).

In this paper, we show that using novel econometric methods provides evidence for a positive causal effect of religion on SWB. These methods require more lenient assumptions that are more plausible for the research question under consideration than the exclusion assumption of traditional IVs. In particular we use the Monotone Instrumental Variable (MIV) and Monotone Treatment Selection (MTS) assumptions as developed in Manski and Pepper (2000). We apply these methods to data from the World Values Survey. Using only the MIV assumption, the effect of religion on SWB cannot be signed. Introducing the MTS assumption in addition to the MIV assumption allows us to find a positive and significant effect of religion on SWB.

We rely on data from the World Values Survey to conduct our analysis. The World Values Survey is a survey that collects data mainly on values and beliefs from people around the world. It is commonly used in SWB studies and contains many questions on religion that make it ideal for our research question. We use a subjective measure of relative income as an instrument. As we will show in section 4, this measure clearly does not fulfill the exclusion restriction of a traditional IV. However, it very plausibly fulfills the requirements of an MIV.

In section 2 we will review the academic literature on SWB, and in particular, religion's effect on it. Next, in section 3 we will give an overview of the data used for our analysis.

In [section 4](#) we present the two assumptions we will be using, MIV and MTS, and the estimation procedures that they produces. In [section 5](#) we present the results of our analysis.

2   Literature Review

Over the last couple of decades, the study of SWB has exploded. The ultimate goal of SWB economics is to track people's utility as elicited and proxied by measures of SWB. [MacKerron](#) ([2012](#)) provides a broad overview of SWB economics, including its history, methods, applications and critiques. On it's most basic level, SWB can be used to observe what makes people happy. Do higher incomes make people happier? Does democracy make people happier? Does religion make people happier?

One of the most consistent findings in the field of SWB is that income, both absolute and relative to one's reference group, are positively associated with SWB ([MacKerron](#), [2012](#); [Stevenson and Wolfers](#), [2008](#)). This strong and consistent result is what supports our use of relative income as an MIV in our analysis, as we will discuss in [subsection 4.1](#).

Focusing specifically on the connection between religion and SWB, the field has traditionally divided religiosity into two categories: internal religiosity and external religiosity. Internal religiosity is described as "belief in God and a trusting acceptance of God's will" ([Frey](#), [2018](#)). External religiosity, on the other hand, is described as "all observable activities that are undertaken in a religious context, most conspicuously when going to church" (ibid.). Correlational evidence shows a positive link between both internal and external religiosity and SWB ([Steiner et al.](#), [2010](#); [Frey](#), [2018](#)).

3   Data

To investigate our research question we use the World Values Survey's (WVS) longitudinal data, which was collected over seven waves between the years 1981 and 2020. Each wave of the survey is conducted on a global scale, covering over 100 countries and over 90% of the human population. The survey focuses on questions related to beliefs and values.

Notably, every wave has contained a question on life satisfaction and the survey has been used in many articles in the SWB literature.

The following question on life satisfaction is asked on the WVS: "All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer." which is considered standard wording for life satisfaction questions. The question is asked on a 1 to 10 scale, with 1 labeled as "Dissatisfied" and 10 labeled as "Satisfied".

The WVS has many questions on religion to choose from. We used a binary question asking for belief in God as a proxy for internal religiosity. For our proxy of external religiosity we used the following question: "How often do you attend religious services?" which has multiple potential responses referring to different time frames. This question was then transformed into a binary variable, which receives the value one if the respondent attends religious services at least one time a month, and zero otherwise.

We use the following question as our instrument: "On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in." With the lowest response being "lower step" the middle responses being "second step", "third step", etc, and the highest response being "higher step".

As stated above, the WVS contains samples from all around the world. Answers to SWB questions can be subject to cultural and individual biases. This is always a limitation of SWB research, but to try to limit the effect of these biases on our results we do not pool the data or compare between countries. This is particularly important due to our choice of instrument, which asks for one's income group *in one's own country*. In subsection 4.1 we discuss why this means that this variable is a valid MIV only when using data from a single country. To deal with these concerns while still aiming for results that hold across different geographic regions and cultures we have selected seven countries (United States, Germany, Japan, Turkey, Colombia, Mexico and Australia) and conducted the analyses separately on each country. The countries were selected based on sample size while aiming to represent a variety of different cultures.

4 Research Methods

4.1 MIV

Traditional Two stage least squares (2SLS) estimation relies on the famous *exclusion restriction* which is as follows:

$$E[y(t)|w, v = u] = E[y(t)|w, v = u'] \quad \forall t \in T, w \in W, (u, u') \in V \times V \tag{1}$$

Where $y(\cdot)$ is the outcome of interest, in this case, life satisfaction. t is the treatment, and T is the set of values the treatment can receive. In this case, either internal or external religiosity. w are controls and W is the set of values the controls can receive, in this case, country. u is the instrument and V is the set of values the instrument can receive. In this case the instrument is subjective relative income.

As described in section 2, income is one of the best predictors of SWB. Therefore the exclusion restriction is clearly not valid for our set of variables. Instead, because income is one of the best predictors of SWB in all countries and all levels of religiosity, we would expect that when holding the treatment and country constant, a higher level of income would correspond with a higher expected well-being. This description coincides with the MIV assumption, which is as follows:

$$E[y(t)|w, v = u] \geq E[y(t)|w, v = u'] \quad \forall t \in T, w \in W, (u, u') \in V \times V, s.t. u \geq u' \tag{2}$$

Thus, MIV is a very reasonable assumption given our data. Crucially, this assumption only holds when we control for country. This is due to the fact that the question on subjective relative income uses the individual's country of residence as a reference point. It is not clear that the inequality above would hold if we pooled the data across countries, because for example, someone who is relatively poor in a rich country might have a higher expected life satisfaction than someone who is relatively rich in a poor country.

We implement the MIV assumption as described in Manski and Pepper (2000) for both belief in God and attendance of religious services as proxies for internal and external religiosity respectively, using subjective relative income as our MIV. The results of our

estimation process are presented in subsection 5.3. In order to determine the strength of our MIV, we run first stage regressions, which are found in subsection 5.2. We predict that the coefficents in the first-stage regressions will be negative, because poor people tend to be more religious than rich people.

4.2 MTS

The MTS assumption as given by Shurtz et al. (2018) assumes that the expectation of the outcome variable is higher for each level of treatment when the *realized treatment* is higher. A good example of this assumption is returns to schooling. Many people suspect that individuals with higher levels of ability self-select into receiving more education. At the same time, people with higher levels of ability will have greater earning potential at every level of education than those with lower levels of ability. Thus, individuals with a higher level of realized schooling will on average have a higher earning potential. Mathematically, the MTS assumption in Shurtz et al. (2018) is as follows:

$$E[y(t)|w, v = u, z = 1] \geq E[y(t)|w, v = u, z = 0] \quad \forall t \in T, w \in W, u \in V \tag{3}$$

Where z is the realized treatment and the rest of the notation is identical to that in subsection 4.1. In our case, $z = 1$ refers to the case where the individual believes in God or attends religious services, for internal or external religiosity respectively. $z = 0$ refers to individuals who don't believe in God or don't attend religious services.

We propose the opposite assumption, in which we flip the inequality and arrive at the following:

$$E[y(t)|w, v = u, z = 1] \leq E[y(t)|w, v = u, z = 0] \quad \forall t \in T, w \in W, u \in V \tag{4}$$

For the remainder of the paper, when we refer to the MTS assumption, we are referring to inequality (4). The motivation behind this assumption is similar to the example from returns to schooling, but with the opposite direction of self-selection. We assume here that individuals with *lower* levels of life satisfaction self-select into believing in God and

attending religious services. We consider this assumption to be plausible, albeit less convincing than the reasoning behind the MIV assumption above.

Augmenting the MTS assumption to the MIV assumption allows us to estimate the conditional expectations of life satisfaction at each treatment level in a manner similar to Manski and Pepper (2000). The difference being that some of the unknown quantities can be given tighter boundaries than under normal MIV estimation.

In particular, we find that:

$$
\begin{aligned}
E[y(0)|v = u] &= E[y(0)|v = u, z = 0] \cdot P(z = 0|v = u) + E[y(0)|v = u, z = 1] \cdot P(z = 1|v = u) \\
&\leq E[y(0)|v = u, z = 0] \cdot P(z = 0|v = u) + E[y(0)|v = u, z = 0] \cdot P(z = 1|v = u) \\
&= E[y(0)|v = u, z = 0]
\end{aligned}
$$

$$(5)$$

and:

$$
\begin{aligned}
E[y(1)|v = u] &= E[y(1)|v = u, z = 0] \cdot P(z = 0|v = u) + E[y(1)|v = u, z = 1] \cdot P(z = 1|v = u) \\
&\geq E[y(1)|v = u, z = 1] \cdot P(z = 0|v = u) + E[y(1)|v = u, z = 1] \cdot P(z = 1|v = u) \\
&= E[y(1)|v = u, z = 1]
\end{aligned}
$$

$$(6)$$

Where w has been omitted for convenience. Without the MTS assumption we would need to replace $E[y(0)|v = u, z = 1]$ from the second line of (5) with the maximum value y can receive and $E[y(1)|v = u, z = 0]$ from the second line of (6) with the minimum value y can receive, leading to larger bounds. The above in turn allows us to tighten the upper bound of $E[y(0)]$ and the lower bound of $E[y(1)]$. Utilizing both the MIV and the MTS assumptions together, we refer to this estimation procedure as MIV/MTS estimation. The results of our MIV/MTS estimation can be found in subsection 5.4.

4.3 OLS

For comparison with our results from the MIV and MIV/MTS estimations, we also perform simple ordinary least squares (OLS) regressions of life satisfaction on the two independent

variables of interest with no controls. The results from the OLS regressions can be found in subsection 5.1. We also performed 2SLS regressions using the same instrument as above. However, as noted in subsection 4.1, the exclusion restriction is clearly implausible for our choice in variables. The results received from these regressions were clearly unreliable and therefore have been omitted.

5 Results

5.1 OLS

We will start by presenting the results of the OLS regressions as a baseline. The results when using belief in God as the independent variable can be found in Table 1. Belief in God is found to be a positive and highly significant predictor of happiness in all of the countries studied, with its effect ranging from a minimum of 0.172 points of life satisfaction in Australia to a maximum 0.727 points of life satisfaction in Colombia.

The results when using attendance of religious services as the independent variable can be found in Table 2. Attendance of religious services is found to be a positive and highly significant predictor of happiness in all of the countries studied with the exception of Turkey. The effect of attendance on life satisfaction ranges from a minimum of 0.035 points of life satisfaction in Turkey, to a maximum of 0.617 points of life satisfaction in the United States.

Comparing across independent variables, no one factor dominates the other. In some countries belief in God has a larger effect, whereas in others attendance of religious services has a larger effect. The results from this analysis provide only evidence of a correlation between internal and external religiosity and life satisfaction. In subsection 5.3 and subsection 5.4, we will use the MIV and MTS assumptions to receive results with causal implications. The results from OLS, however, provide us a baseline to which we can compare the results from the MIV and MIV/MTS estimations procedures. Prior to looking at these results, in the next section we will look at the first stage regressions of subjective relative income on each of the two independent variables to see if our instrument is strong.

5.2 First Stage Regressions

The results from the first stage regressions can be found in Table 3 and Table 4, with the first corresponding to belief in God as the variable of interest and the second responding to attendance of religious services as the variable of interest.

In Table 3, we find that the instrument is strong (F statistic above 10) for every country except for Japan. In Table 4, we find that the instrument is strong for the United States, Turkey, Colombia and Mexico, and weak for Germany, Japan, and Australia. Unsettlingly, the sign of the correlation between subjective relative income and both measures of religiosity change between countries, whereas in section 4 we predicted that the correlation would be negative.

5.3 MIV

The ATE of believing in God given by using the MIV assumption can be found in Table 5. For no country can we sign the effect, nor do we receive any useful information. The ATE in each country is bounded between large (in absolute value) negative values and large positive values, thus we see little more than noise. The same results can be seen graphically in Figure 1 and Figure 2, wherein the first shows the expected life satisfaction for people who don't and do believe in God as two separate bounds for each country. The second figure uses this same data to graph the ATE for each country. The fact that the bounds cross zero implies that we cannot sign the effect.

Similarly, the ATE for attending religious services given by using the MIV assumption can be found in Table 6. Again, we cannot sign the effects and little to no important information can be aquired. Figure 3 and Figure 4 mimic Figure 1 and Figure 2 respectively.

In summary, the MIV assumption does not allow us to gain any information on the causal effect of internal or external religiosity on life satisfaction.

5.4 MIV/MTS

The inclusion of the MTS assumption radically changes the results. As opposed to the previous section, in which we were unable to sign the effect of internal or external religiosity

within any country, when the MTS assumption is added we are able to sign said effect for both forms of religiosity and for every country.

Table 7 presents the results for the ATE of believing in God on life satisfaction when using both the MIV and the MTS assumptions. Similarly to the last section, Figure 5 and Figure 6 present this result graphically. In Table 7 for all countries the minimum ATE is above zero, which implies that we are able to sign the effect. Not only are we able to sign the effect, but the effect is surprisingly strong. The maximum ATE is unrealistically high for all countries, implying that we cannot realistically bound the ATE from above. The minimum ATE by contrast, provides valuable information. For all countries except for the United States (for which it is very close) the minimum ATE is higher than the benchmark effect found in Table 1 using OLS.

Looking at Table 8, we see that we find very similar results for the ATE of attending religious services when using both the MIV and the MTS assumptions. Figure 7 and Figure 8 present these results graphically. Again we find that the maximum ATE does not provide a realistic bound, but that the minimum ATE is very informative. Similarly to belief in God, the minimum ATE for attending religious services when using the MIV and MTS assumptions is higher than the OLS benchmark from Table 2 for every country except for the United States.

6 Conclusion

Previous research has found a positive association between both internal and external religiosity and SWB, but has stopped short of proving causality. The results of our OLS regressions reproduce this result (albeit without the controls which most previous studies have used). Using novel econometric techniques for set identification that require more lenient assumptions which are more amenable to SWB research, we aimed to estimate the causal impact of internal and external religiosity on SWB. Specifically, we focus on religiosity's effect on the WVS's life satisfaction question. Using the highly plausible MIV assumption, we are unable to sign the effect of either internal or external religiosity on life satisfaction. Introducing the still plausible, but perhaps more questionable (in this

circumstance) MTS assumption allows us to find positive and large causal effects of both internal and external religiosity on life satisfaction.

Limitations still remain, such as the perplexing correlation between subjective relative income and both internal and external religiosity, which changes signs between countries. In addition, for a couple of religiosity/country combinations the instrument was not strong. Lastly, we only analysed responses to life satisfaction question. Further research could focus on other SWB questions. Despite the limitations of our study, this study represents a significant advancement in determining the causal effect of religiosity on SWB.

References

Frey, B. S. (2018). Happiness and religion. In *Economics of Happiness*, pages 59–62. Springer.

Inglehart, R., Haerpfer, C., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., Lagos, M., Norris, P., Ponarin, E., and et al. (eds.), B. P. (1981–2020). World Values Survey: All Rounds – Country Pooled Datafile. Madrid, Spain & Vienna, Austria: JD Systems Institute & WVSA Secretariat. http://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp.

MacKerron, G. (2012). Happiness economics from 35 000 feet. *Journal of Economic Surveys*, 26(4):705–735.

Manski, C. F. and Pepper, J. V. (2000). Monotone instrumental variables: With an application to the returns to schooling. *Econometrica*, 68:997–1010.

Shurtz, I., Eizenberg, A., Alkalay, A., and Lahad, A. (2018). Physician workload and treatment choice: the case of primary care. *CEPR Discussion Paper No. DP13157*.

Steiner, L., Leinert, L., and Frey, B. S. (2010). Economics, religion and happiness. *Zeitschrift für Wirtschafts-und Unternehmensethik*, 11(1):9–24.

Stevenson, B. and Wolfers, J. (2008). Economic growth and subjective well-being: Reassessing the easterlin paradox. *Brookings Papers on Economic Activity*.

A   Tables and Figures

Table 1: Effect of Belief in God on Life Satisfaction, OLS

	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Believe	0.622***	0.365***	0.335***	0.628***	0.727***	0.293***	0.172***
	(0.063)	(0.051)	(0.053)	(0.155)	(0.182)	(0.102)	(0.052)
Constant	6.967***	7.143***	6.535***	5.710***	7.641***	7.730***	7.462***
	(0.060)	(0.038)	(0.040)	(0.153)	(0.181)	(0.100)	(0.044)
Observations	11,476	5,338	5,554	8,798	6,021	10,012	6,254
R^2	0.008	0.009	0.007	0.002	0.003	0.001	0.002
Adjusted R^2	0.008	0.009	0.007	0.002	0.002	0.001	0.002
Residual Std. Error	1.906	1.876	1.942	2.411	1.835	2.093	1.850
F Statistic	98.113***	50.278***	40.253***	16.329***	15.892***	8.263***	10.939***

*p<0.1; **p<0.05; ***p<0.01

Note: Each column represents a separate regression where the dependent variable is life satisfaction and the independent variable is belief in God, which receives a 1 if the respondent believes in God, and 0 otherwise.

Table 2: Effect of Relgious Service Attendance on Life Satisfaction, OLS

	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Attend	0.617***	0.373***	0.402***	0.035	0.184***	0.170***	0.314***
	(0.033)	(0.058)	(0.062)	(0.048)	(0.038)	(0.042)	(0.051)
Constant	7.192***	7.219***	6.678***	6.458***	8.186***	7.925***	7.442***
	(0.024)	(0.026)	(0.021)	(0.030)	(0.030)	(0.034)	(0.024)
Observations	12,471	6,778	9,041	10,879	12,015	11,428	7,439
R^2	0.027	0.006	0.005	0.00005	0.002	0.001	0.005
Adjusted R^2	0.026	0.006	0.005	-0.00004	0.002	0.001	0.005
Residual Std. Error	1.866	1.884	1.906	2.429	1.976	2.092	1.839
F Statistic	339.490***	41.807***	42.234***	0.525	23.705***	16.602***	38.547***

$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Note: Each column represents a separate regression where the dependent variable is life satisfaction and the independent variable is attendance of religious services, which receives a 1 if the respondent attends religious services at least once a month, and 0 otherwise.

Table 3: First Stage Regressions for Belief in God

	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Subjective Relative Income	0.006***	0.021***	-0.005^{**}	-0.003^{***}	-0.003^{***}	-0.004^{***}	-0.016^{***}
	(0.001)	(0.004)	(0.003)	(0.001)	(0.001)	(0.001)	(0.002)
Constant	0.876***	0.432***	0.597***	0.984***	0.996***	0.968***	0.789***
	(0.007)	(0.020)	(0.014)	(0.004)	(0.004)	(0.004)	(0.014)
Observations	10,652	4,902	4,913	8,483	5,998	9,085	5,632
R^2	0.002	0.006	0.001	0.001	0.002	0.002	0.007
Adjusted R^2	0.002	0.006	0.001	0.001	0.002	0.002	0.007
Residual Std. Error	0.289	0.497	0.494	0.166	0.130	0.211	0.453
F Statistic	24.430***	31.315***	3.906**	11.290***	13.940***	14.935***	39.881***

$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Note: Each column represents a separate regression where the dependent variable is belief in God. The independent variable "Subjective Relative Income" refers to the question: "On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in."

Table 4: First Stage Regressions for Religous Service Attendance

	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Subjective Relative Income	0.022***	0.008***	−0.003**	−0.016***	−0.006***	−0.009***	−0.006***
	(0.002)	(0.003)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	0.395***	0.157***	0.137***	0.456***	0.672***	0.703***	0.252***
	(0.012)	(0.014)	(0.007)	(0.011)	(0.009)	(0.009)	(0.011)
Observations	11,646	6,198	8,040	10,534	11,664	10,422	6,823
R^2	0.011	0.001	0.001	0.005	0.001	0.002	0.001
Adjusted R^2	0.011	0.001	0.0005	0.005	0.001	0.002	0.001
Residual Std. Error	0.497	0.396	0.329	0.486	0.478	0.472	0.415
F Statistic	128.565***	8.348***	4.999**	51.447***	10.815***	25.035***	8.747***

*p<0.1; **p<0.05; ***p<0.01

Note: Each column represents a separate regression where the dependent variable is a binary variable equal to one if the respondent attends church services at least once a month, and zero otherwise. The independent variable "Subjective Relative Income" refers to the question: "On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in."

Table 5: ATE of Belief in God on Life Satisfaction, using MIV

Country	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
Min ATE	-2.71	-4.09	-4.00	-3.66	-1.61	-1.92	-3.03
Max ATE	6.16	4.29	4.69	5.28	7.19	6.70	5.34

Note: Each column reports the result of MIV estimation where the dependent variable is life satisfaction and the independent variable is belief in God, which receives a 1 if the respondent believes in God, and 0 otherwise. Subjective relative income is used at the instrument.

Table 6: ATE of Religious Service Attendance on Life Satisfaction, using MIV

Country	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
Min ATE	-4.11	-5.42	-5.27	-4.60	-3.40	-3.13	-5.31
Max ATE	4.64	3.31	3.63	4.28	5.33	5.34	3.46

Note: Each column reports the result of MIV estimation where the dependent variable is life satisfaction and the independent variable is attendance of religious services, which receives a 1 if the respondent attends religious services at least once a month, and 0 otherwise. Subjective relative income is used at the instrument.

Table 7: ATE of Belief in God on Life Satisfaction, using MIV/MTS

Country	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
Min ATE	0.61	0.45	0.41	0.98	1.14	0.67	0.30
Max ATE	6.16	4.29	4.69	5.28	7.19	6.70	5.34

Note: Each column reports the result of MIV/MTS estimation where the dependent variable is life satisfaction and the independent variable is belief in God, which receives a 1 if the respondent believes in God, and 0 otherwise. Subjective relative income is used at the instrument.

Table 8: ATE of Religous Service Attendance on Life Satisfaction, using MIV/MTS

Country	United States	Germany	Japan	Turkey	Colombia	Mexico	Australia
Min ATE	0.55	0.53	0.53	0.12	0.29	0.47	0.41
Max ATE	4.64	3.31	3.63	4.28	5.33	5.34	3.46

Note: Each column reports the result of MIV/MTS estimation where the dependent variable is life satisfaction and the independent variable is attendance of religious services, which receives a 1 if the respondent attends religious services at least once a month, and 0 otherwise. Subjective relative income is used at the instrument.

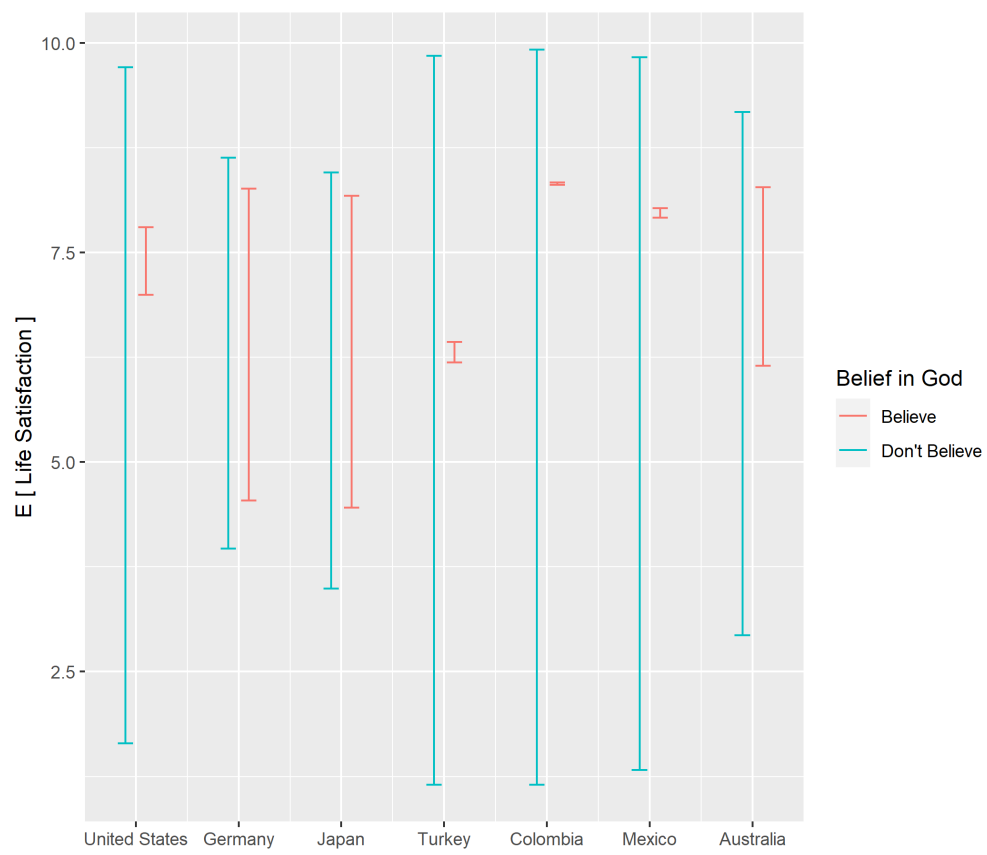Figure 1: Expected Life Satisfaction by Belief in God, Using MIV

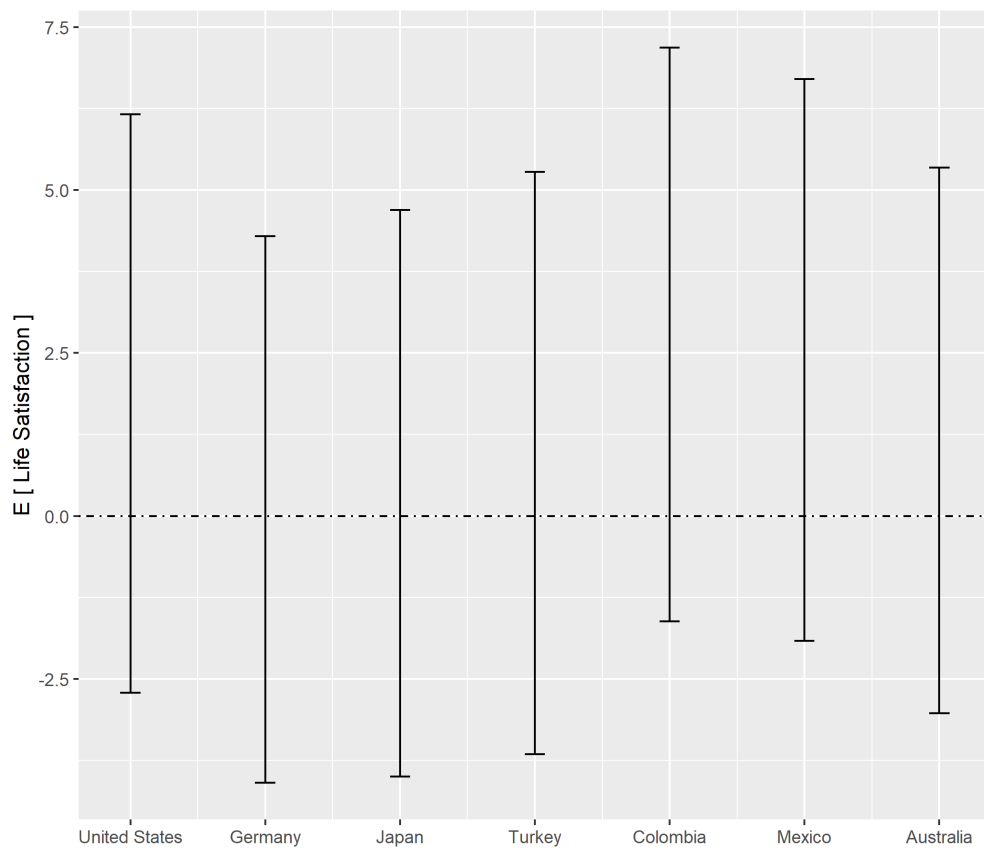Figure 2: Average Treatment Effect of Belief in God, Using MIV

Figure 3: Expected Life Satisfaction by Religious Service Attendance, Using MIV
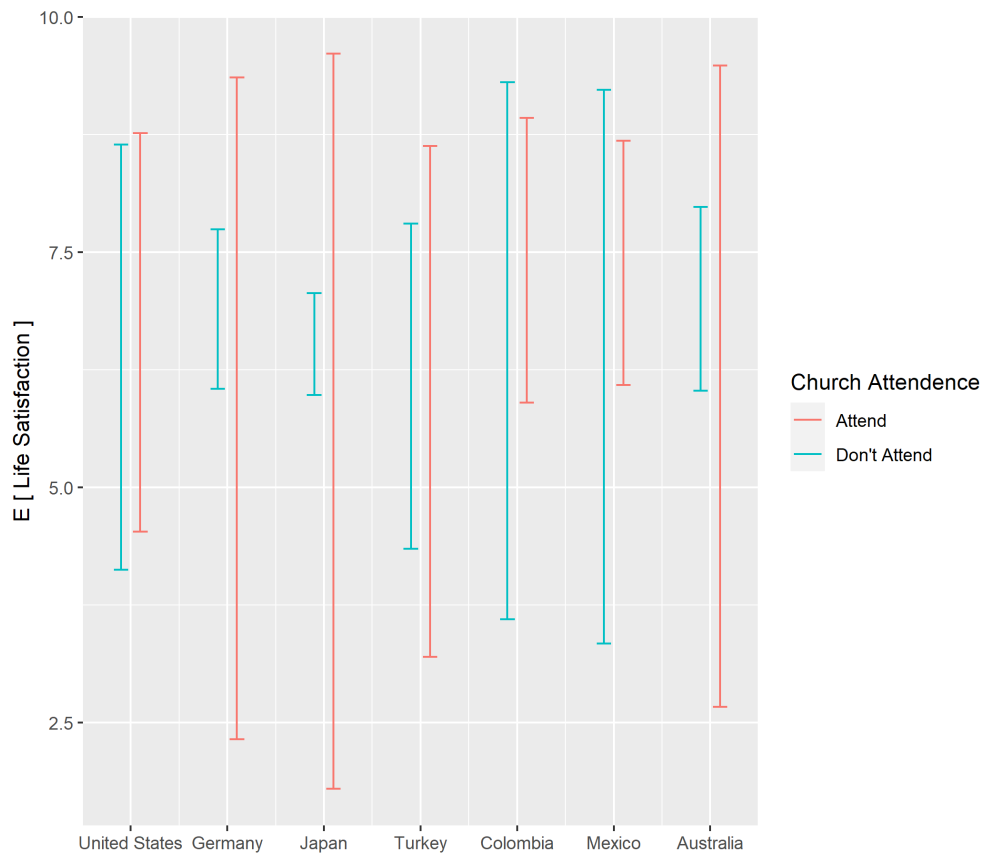
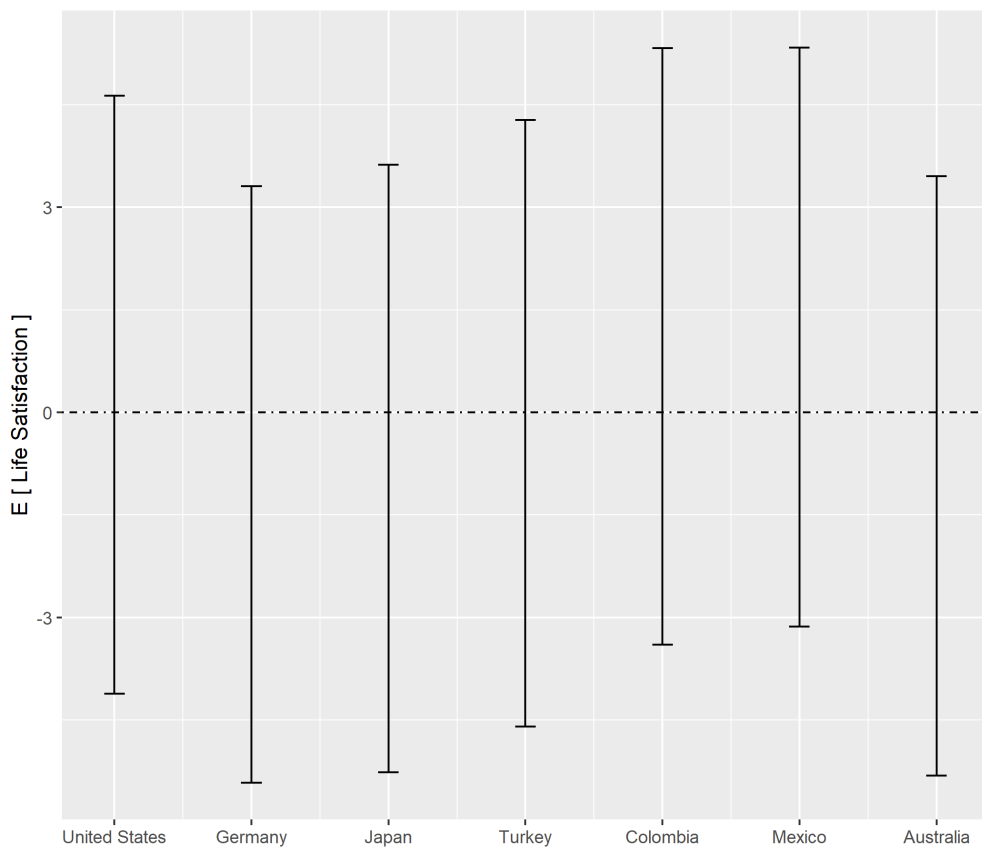Figure 4: Average Treatment Effect of Religious Service Attendance, Using MIV

Figure 5: Expected Life Satisfaction by Belief in God, Using MIV/MTS
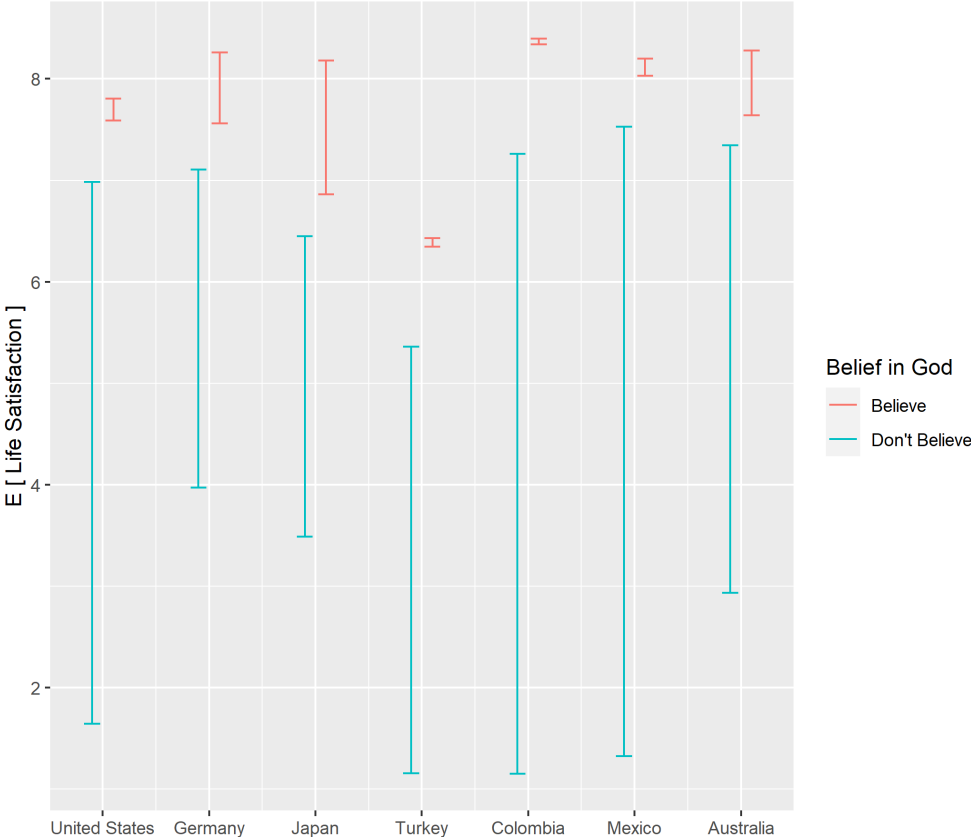
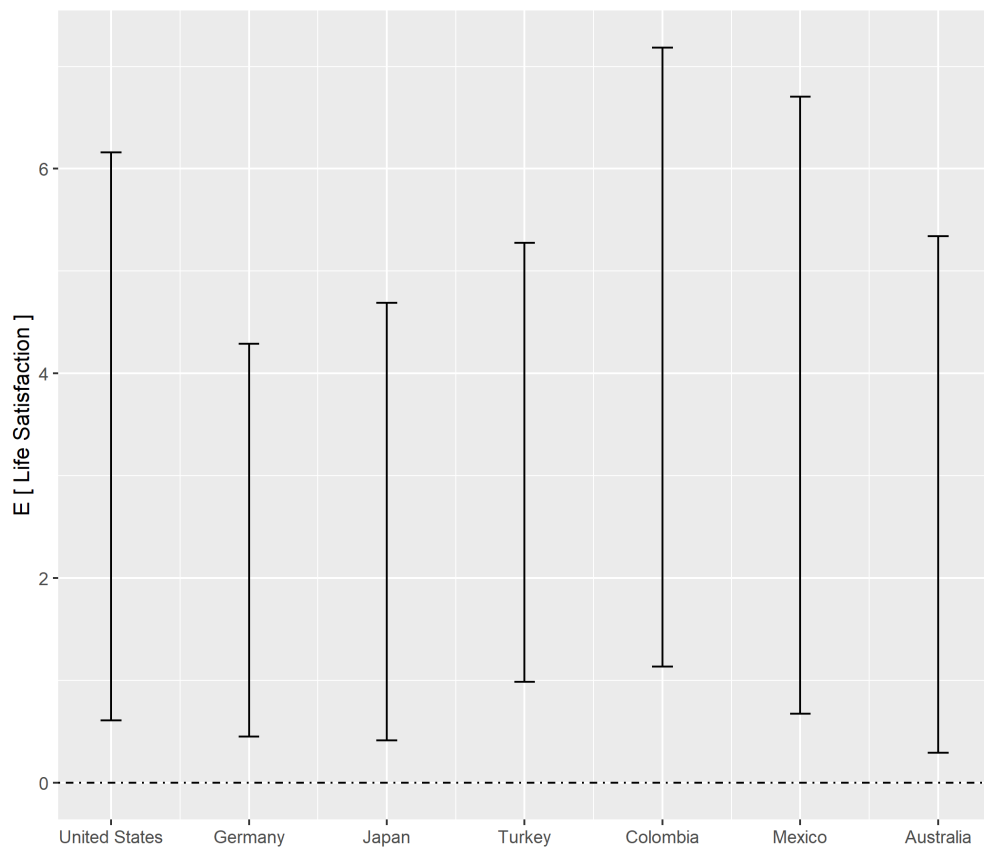Figure 6: Average Treatment Effect of Belief in God, Using MIV/MTS

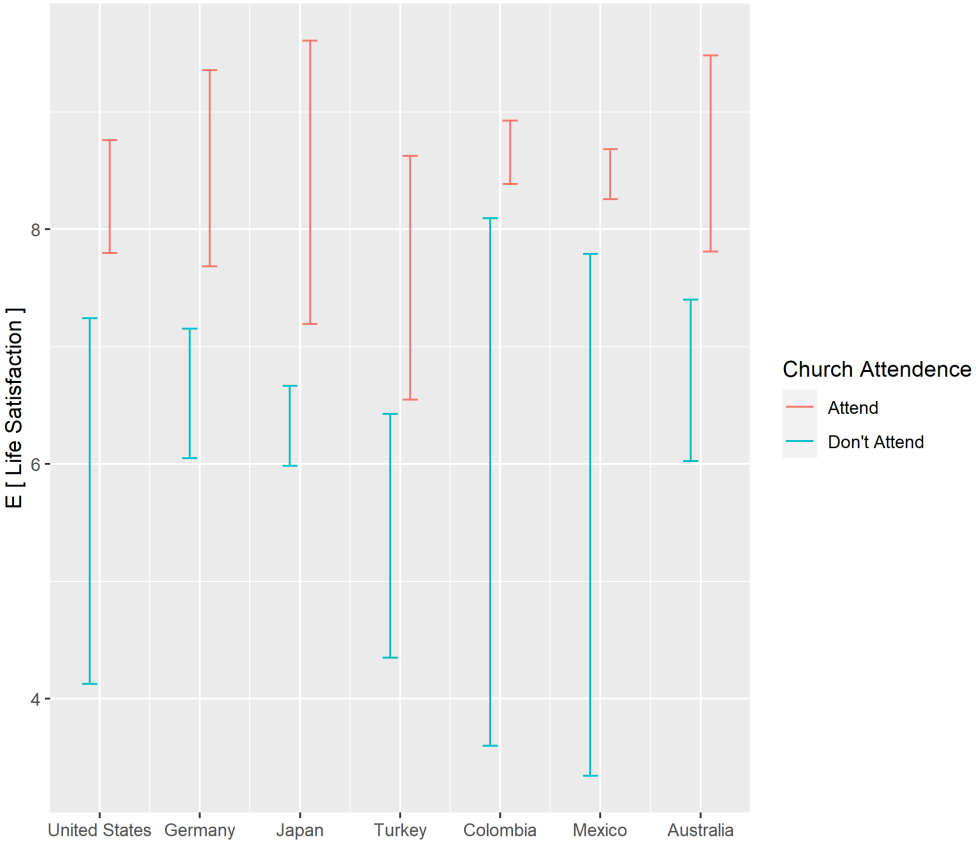Figure 7: Expected Life Satisfaction by Religious Service Attendance, Using MIV/MTS

Figure 8: Average Treatment Effect of Religious Service Attendance, Using MIV/MTS