



Adolescent Religious Motivation: A Self-Determination Theory Approach



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ABSTRACT

The purpose of the present set of studies was to develop a short and valid measure of religious motivation based on self-determination theory and demonstrate the role of religious motivation on youth outcomes. Participants were from five studies of religious adolescents and their parents from across the U.S (total $N = 2982$). Using confirmatory factor analyses we created a 12-item Religious Internalization Scale (RIS-12) capturing three forms of religious motivation: external, introjected, and identified. Relations between religious motivation and youth outcomes were assessed using structural equation modeling. In general, identified religious motivation positively predicted adaptive outcomes (e.g., prosocial behaviors, psychological well-being, and positive traits) and negatively predicted maladaptive outcomes (e.g., antisocial and health-risk behaviors, mental illness, and negative traits), whereas the inverse was largely true for external religious motivation. Introjected religious motivation was a poor predictor of outcomes. Further, identified religious motivation often remained predictive of outcomes when controlling for religious involvement. Lastly, in several cases, identified religious motivation and religious involvement interacted when predicting youth outcomes such that higher identified religious motivation strengthened links between religious involvement and outcomes. These findings validate the RIS-12 as a self-determination theory measure of religious motivation and elucidate the important role of identified religious motivation during adolescence.

Religiousness plays an important role in adolescent development and functioning (Hardy et al., 2019). Specifically, religious adolescents enjoy better physical and mental health, experience greater psychological well-being, engage in less antisocial and health-risk behaviors, and engage in more prosocial and healthy activities. Prior research has focused on the roles of religious involvement (e.g., attendance at worship services) and religious salience (e.g., importance of religion), or overall religiousness (often a combination of involvement and salience). However, another possible factor, less frequently studied, is religious motivation – the motivations underlying religious behaviors. Self-determination theory (SDT) provides a framework for conceptualizing religious motivation. The purpose of the present set of studies was to refine and validate a measure of religious motivation based on self-determination theory and demonstrate the role of different types of religious motivation in a range of youth outcomes.

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Religious orientation as an approach to religious motivation

The typical approach to religious motivation is “religious orientation” (Allport & Ross, 1967). There are two primary religious orientations – *extrinsic* and *intrinsic*. Extrinsic religious orientation involves instrumentally using religion to achieve desired ends, such as security, comfort, and social connection. Intrinsic religious orientation is based on internalized religious beliefs and practices, the desire to live one’s religion, and gratitude to God. With extrinsic orientation, religion is a means to selfish ends, whereas with intrinsic orientation it is an end in and of itself. Despite the popularity of religious orientation, for three decades scholars have pushed for more theoretically and psychometrically sound approaches to religious motivation (Kirkpatrick & Hood, 1990).

A self-determination theory approach to religious motivation

More recently, researchers have sought to leverage SDT to provide a more nuanced approach to religious motivation (Neyrinck et al., 2006; Ryan et al., 1993). Per SDT, motivations for behavior range along a continuum from those that feel controlled (less self-determined) to those that feel autonomous (more self-determined; see Figure 1; see Deci & Ryan, 2012 for a review). The most autonomous form of motivation, *intrinsic motivation*, involves acting out of the inherent pleasure and joy of the behavior. When individuals lack intrinsic motivation for a behavior, they can act for the sake of other reasons, called *extrinsic motivations*. There are four forms of extrinsic motivation: external, introjected, identified, and integrated. Behavior can be extrinsically motivated by socially contingent punishments or rewards (external motivation), self-imposed internal affective consequences such as shame or self-esteem (introjected motivation), appreciation of the importance or value of the behavior (identified motivation), or the congruence of the behavior with a person’s identity and life goals (integrated motivation). These extrinsic motivations range from being less internalized to more internalized. Across the continuum, external and introjected motivations are experienced as controlled, while identified, integrated, and intrinsic motivation are experienced as autonomous. In short, SDT provides a theoretically-grounded approach to religious motivation with an expanded continuum.

There are a number of ways in which taking an SDT approach to religious motivation extends prior work done on religious orientation (Neyrinck et al., 2010). First, it grounds religious motivation in a predominant theory of human motivation. This makes it easier to develop hypotheses regarding factors that might help or hinder religious motivation (an important topic for future research which we do not take up in the present study, but which we set the stage for). Second, SDT’s continuum of motivation further differentiates motivation beyond two forms, and more clearly distinguishes the different forms of motivation. Third, SDT provides richer descriptions of and data on the range of human motivations for behavior than does the religious orientation model. This is because SDT is a more developed theory of motivation that has been applied to a variety of life domains, such as education, business and marketing, exercise science, sports, music and arts, and parenting (Ryan & Deci, 2017).

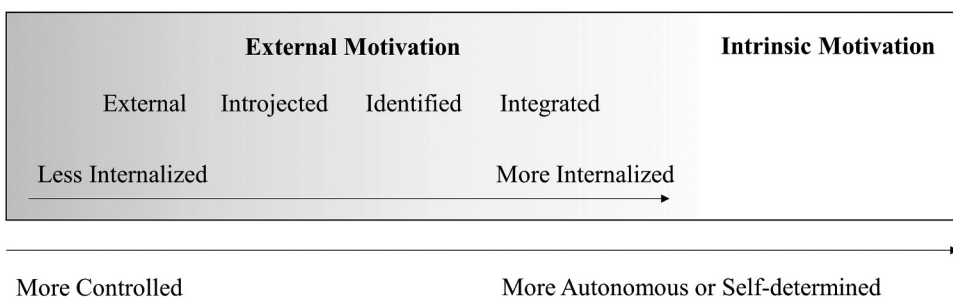


Figure 1. Self-determination theory continuum of motivation.

Measures and correlates of religious motivation from an SDT perspective

Few studies have used SDT as a framework for examining religious motivation. The initial effort yielded a measure tailored to Christian faiths that only differentiated between introjected and identified motivations (Ryan et al., 1993). To demonstrate validity, Ryan and colleagues showed that introjected religious motivation correlated positively with extrinsic religious orientation, while identified motivation correlated negatively with extrinsic religious orientation and positively with intrinsic religious orientation. Further, identified religious motivation was more strongly positively correlated with worship service attendance than was introjected religious motivation. In terms of links to outcomes, introjected religious motivation correlated positively with maladaptive outcomes (e.g., depression), and correlated negatively with adaptive outcomes (e.g., self-esteem), while the opposite was found for identified religious motivation. Further, relations tended to be stronger for identified than introjected religious motivation. This pattern was more consistent for introjected and identified religious motivations than for extrinsic and intrinsic religious orientations. These results were among Christian college students. Similar patterns of findings have been reported in other studies among adolescents and young adults (Brambilla et al., 2013, 2014).

More recently, the Religious Internalization Scale (RIS) was designed to improve upon this initial measure (Neyrinck et al., 2010, 2006). The RIS was adapted for a broad range of religious traditions, included items capturing all five types of motivation (external, introjected, identified, integrated, and intrinsic), and allowed participants to first provide a religious behavior important to them and then answer the items in reference to that behavior. Neyrinck et al. (2006) found that among Belgian Christian adults, external religious motivation was weakly and negatively correlated with religious behaviors (worship service attendance and prayer). On the other hand, introjected and identified religious motivation were positively correlated with religious behaviors, with the relation to prayer being stronger for identified religious motivation. Further, relations with psychological well-being outcomes were such that relations were all negative for external religious motivation (although not always significant), mixed for introjected religious motivation (sometimes significantly positive, sometimes significantly negative, and sometimes unrelated), and positive for identified religious motivation (with tests consistently being significant). Similarly, among U.S. teens, Hardy and colleagues (Hardy et al., 2013) found that a weighted composite capturing overall autonomous religious motivation (using the RIS) correlated positively with religious behaviors and self-control, and negatively with pornography use.

The present research

SDT provides a rich theoretical approach for examining religious motivation, but few studies of religious motivation have incorporated this framework. Up to the point, the RIS is the most developed SDT-based measure of religious motivation. However, it was designed in Dutch, seemed unnecessarily lengthy, and warranted further validation work. Thus, in the present set of studies, we sought to (1) reduce the number of items, (2) improve the English wording, (3) evaluate the psychometrics of our revised version, (4) further establish the validity of the measure, and (5) more extensively examine the role of religious motivation in adolescent psychosocial functioning.

Methods

Sample

The data came from five studies of U.S. adolescents ($N = 348$; $N = 655$; $N = 360$; $N = 357$; $N = 1262$), for a total N of 2982. We report sample characteristics from each study in Table 1. None of these studies focused on religious motivation. Nevertheless, they all had data on religious motivation, as well as a variety of relevant covariates. Thus, in aggregate they provide an opportunity to further develop and

Table 1. Sample characteristics.

Characteristics	Study 1	Study 2	Study 3	Study 4	Study 5
N	348	655	360	357	1262
Age	15–18 years of age (<i>M</i> age = 15.71, <i>SD</i> = 1.00)	15–18 years of age (<i>M</i> age = 16.47, <i>SD</i> = 1.07)	15–18 years of age (<i>M</i> age = 16.27, <i>SD</i> = .97)	14–18 years of age (<i>M</i> age = 15.64, <i>SD</i> = 1.23)	12–17 years of age (<i>M</i> age = 14.18, <i>SD</i> = 1.09)
Gender	54% Male	51% Male	58% Male	47% Male	47% Male
Ethnicity	83% European American 3% African American 6% Hispanic 6% Asian American 2% other	67% European American 15% African American 8% Hispanic 3% Asian American 7% other	70% European American 13% African American 11% Hispanic 1% Asian American 5% other	75% European American 9% African American 8% Hispanic 2% Asian American 6% other	82% European American 2% African American 6% Hispanic 1% Asian American 9% other
Religion	44% Protestant 24% Catholic 8% other 24% none	36% Protestant 19% Catholic 14% other 31% none	48% Protestant 19% Catholic 6% other 27% none	30% Protestant 18% Catholic 17% other 35% none	9% Protestant 9% Catholic 63% Church of Jesus Christ of Latter-day Saints 3% other
Parent Characteristics	<i>N</i> = 280; 60% mothers; 64% were married and had never been divorced	<i>N</i> = 357; 69% mothers; 55% were married and had never been divorced	<i>N</i> = 357; 54% mothers; 56% married and never divorced	<i>N</i> = 357; 73% mothers; 61% married and never divorced	<i>N</i> = 1255; 84% mothers; 88% married and never divorced

validate the religious motivation measure and examine relations to covariates among nearly three thousand adolescents from across the U.S.

Procedures

All studies were IRB approved. Parents were the initial contact and provided online permission for their teen to participate, and parents and adolescents also provided online consent for themselves. We recruited Study 1 families via eRewards online survey panel, Study 2 and Study 3 families via Survey Sampling International online survey panel, Study 4 families via an Exact Data e-mail database, the Prodege survey panel, or Qualtrics contracted survey panels. These samples were not nationally representative but were diverse convenience samples from across the nation that included participants from most states. For Study 5, we used a regional sample (Utah and Arizona) recruited via telephone databases, primarily InfoUSA. This was a convenience sample representative of these two states. The eRewards, Survey Sampling International, Prodege, and Qualtrics online survey panels include individuals recruited by these companies through a variety of mechanisms. These companies own the contact information for all their panelist, and thus they reached out to potential candidates for us to invite them to participate in our survey. Exact Data and InfoUSA are databases, and thus we purchased contact information from them and contacted potential candidates ourselves.

All five studies involved online surveys using Qualtrics. In Studies 1–3, the adolescent and parent surveys were provided via a single link sent to the parents; the adolescents completed their portion and then the parents completed their portion. For Study 4, in just over half of the cases the surveys were combined – parents took their portion first, followed by the adolescents completing their portion. In the other cases, the surveys were taken using separate links (one sent to the parent and the other sent to the adolescent). For Study 5, in all cases, the surveys were separate links sent to the parent and the adolescent. In Studies 1–3, families were compensated via the online survey panel through which they were recruited, with the form and amount of compensation varying, but typically less than 10 USD per family. In Study 4, just over half of the families were compensated in this way – in the other families, either the parent was compensated via the survey panel and the teen was compensated directly by us in Amazon gift cards (\$10), or the family was compensated in Redbox credits. Study 4 used multiple recruiting and compensation strategies to experiment with the most effective ways to motivate participation. In Study 5, since the survey was more extensive and part of a longitudinal study, parents were compensated 40 USD and adolescents 30 USD (in Amazon.com gift cards).

Measures

Given the large number of measures involved, we will not describe them here. Rather, [Table 2](#) maps out which measures were used in which wave(s), and Online Supplement A (https://osf.io/jh7ea/?view_only=de709f3f738b42d6b4a435562d67d1fd) has descriptions of all the measures. We included measures of five kinds of covariates. First, we included several control variables, such as demographics, social desirability, and puberty. The demographic variables were used to examine how religious motivation varied by demographics. All of these control variables were used as statistical controls, if available, when predicting outcomes. Second, we included measures of many of the most frequently studied dimensions of religiousness, including religious involvement, religious orientation, religious salience, religious identity, spirituality, religious coping, and religious doubt. These were used to examine convergent and discriminant validity with other similar constructs in the same domain of religiousness. The religious involvement variables were also used to demonstrate the unique contribution of religious motivation to outcomes. Third, we included measures of adaptive (self-regulation, self-esteem, purpose, character, civic engagement, and school engagement) and maladaptive (sexual behavior, pornography use, substance use, cheating, externalizing, and internalizing) youth outcomes. These were used to demonstrate links between religious motivation and some of the more important youth outcomes in the literature. Fourth, we included two measures to assess validity with existing

Table 2. Measures.

Variables	Study 1	Study 2	Study 3	Study 4	Study 5
<i>Religiosity</i>					
Religious Motivation	A	A	A	B	C
Religious Involvement	A	A	B	C	D
Religious Orientation			A	B	C
Salience	A			B	B
Religious Identity				A	A
Spirituality	A				B
Religious Coping					A
Religious Doubt					A
<i>Positive Outcomes</i>					
Self-regulation	A		A	B	C
Self-esteem			A		B
Purpose			A		B
Character	A				B
Civic Engagement	A	A	B	C	D
School Engagement			A		B
<i>Negative Outcomes</i>					
Sexual Behavior	A	A		B	C
Pornography Use	A	B		B	C
Substance Use	A	A	B	C	D
Cheating	A				B
Externalizing	A		B	C	D
Internalizing			A		B
<i>Validity Variables</i>					
Global Motivation		A			
Academic Motivation		A			
Social Desirability			A		B
<i>Other</i>					
Pubertal Timing				A	B

Letters A, B, C, and D indicate which measure was used in a given wave. For descriptions of the measures, consult Online Supplement A (https://osf.io/jh7ea/?view_only=de709f3f738b42d6b4a435562d67d1fd). Blank cells indicate that the variable was not measured at that wave.

SDT measures (global motivation and academic motivation). These measures were in different life domains but capture the same SDT forms of motivation.

Most variables were available in more than one study (exceptions are quest religious orientation, positive and negative religious coping, and religious doubt). All measures were online survey instruments. Most were adolescent-report. A few were parent-report, as indicated in the measures descriptions. The items for religious motivation were identical for Studies 1–3. However, we made minor changes to item wording in Study 4, and further changes to item wording and instructions in Study 5. Thus, what distinguishes Study 5 is that it is the largest sample and it involved the final religious motivation measure.

Analysis plan

First, a series of confirmatory factor analyses were conducted in Mplus (version 8.3) using Studies 1–4 (merged data) to reduce the number of Religious Internalization Scale items and establish the factor structure. We wanted to reduce the number of items so the measure could more easily be used in latent variable analysis, where latent variables typically only have about three to five indicators each. We wanted to establish the factor structure such that items were unique indicators of specific types of motivation, and the types of motivation interrelated in a specific way. Specifically, the types of motivation should exhibit a simplex structure such that the closer types of motivation are on the motivational continuum, the more strongly they are related (Deci & Ryan, 2012). After reducing the number of items and establishing the factor structure with merged data from Studies 1–4, the Study 5 data were used to confirm the factor structure and then data from all five studies were merged to obtain factor loadings and inter-factor correlations. Measurement studies typically involve two

samples – one to establish the measure, and another to run confirmatory analyses. We combined Studies 1–4 to establish the measure because they were smaller samples, with similar sampling strategies, and similar item wording on the religious motivation measure. We then used Study 5 to run confirmatory analyses given that it was the largest sample and involved the final religious motivation item wording. After establishing the factor structure in Studies 1–4, and confirming it in Study 5, we combined all five datasets to provide one set of factor loadings and inter-factor correlations.

Second, we also used this combined dataset to evaluate measurement invariance across gender, ethnicity, and religious affiliation. This was to examine whether the measure functioned similarly across various demographic categories. Comparisons across such demographic categories are only valid to the extent that the measure is invariant.

The first two sets of analyses were to develop the measure. The remaining analyses outlined here were to establish validity and examine the role of adolescent religious motivation in adolescent psychosocial functioning. For the third set of analyses, we used a merged dataset (all five studies) in SPSS (version 26) to assess relations between demographics and religious motivation. Fourth, we estimated confirmatory factor analyses in Mplus to establish validity with global and academic motivation. We used these two established SDT measures for validity because the global motivation measure captures general motivational orientation independent of domain, while academic motivation is one of the more frequently studied specific domains. Fifth, within each study, we used Mplus to estimate covariances between the latent variables for the three types of religious motivation and observed variables for various covariates. Sixth, within each study we used Mplus to estimate models whereby the three types of religious motivation predicted various outcomes (with control variables). Seventh, within each sample, we used Mplus to estimate models whereby we examined the relative roles of the three types of religious motivation and public and private religious involvement (with controls). Eighth, within each study we used Mplus to estimate interactions between autonomous religious motivation and religious involvement (public and private, separately) when predicting youth outcomes.

Global model fit was assessed using the Comparative Fit Index (CFI) and Root Mean Squared Error of Approximation (RMSEA). Typically CFI values greater than .90 indicate adequate fit while those greater than .95 indicate good fit, and RMSEA values less than .08 indicate acceptable fit, while those less than .05 indicate good fit (Little, 2013).

All of the analyses for the fifth through the eighth types of analyses outlined above were conducted separately by study. Thus, we summarized results across the five studies using meta-analytic techniques in Stata (version 16.1). These analyses produced weighted average effect sizes (correlation coefficients or standardized regression coefficients, depending on the analysis), *p*-values for *z*-tests of those effects, and 95% confidence intervals around the point estimates of the effects. These are the summarized results presented in Tables 5–8.

Results

Item reduction

For model fit statistics for all preliminary and primary analyses conducted using structural equation modeling, see Online Supplement B (https://osf.io/jh7ea/?view_only=de709f3f738b42d6b4a435562d67d1fd). The first analysis step was to reduce the number of religious motivation items (from the initial pool of 28 items) using data from Samples 1–4. We merged the religious motivation data for these four samples, and then estimated a confirmatory factor analysis in Mplus, only using participants who identified with a religion. We loaded eight items on external motivation, eight items on introjected, and four items each for identified, integrated, and intrinsic motivation. This model adequately fit the data. Examining factor loadings, modification indexes, item wording, and item content, we narrowed the items down to 12 (four items each for external, introjected, and

Table 3. Final revised Religious Internalization Scale (RIS-12) – short form items and standardized factor loadings.

Item	Factor Loadings		
	External Motivation	Introjected Motivation	Identified Motivation
1. Because people will say bad things about me if I don't do it.	.85		
2. Because people will criticize me if I don't do it.	.88		
3. Because people will get mad at me if I don't do it.	.85		
4. Because it makes the people happy who want me to do it.	.53		
5. Because if I don't do it I will feel guilty.		.78	
6. Because if I don't do it I will feel ashamed.		.83	
7. Because if I don't do it I will feel like a failure.		.78	
8. Because I only feel good about myself if I do it.		.62	
9. Because I completely believe in it.			.81
10. Because I greatly value it.			.89
11. Because it is important to me.			.91
12. Because it is meaningful to me.			.90

$N = 2185$, $df = 51$, $\chi^2 = 265.15$, $p < .001$, RMSEA = .04, CFI = .98.

identified motivations; see Table 3 for factor loadings; see Online Supplement D for the measure; https://osf.io/jh7ea/?view_only=de709f3f738b42d6b4a435562d67d1fd). This was both data-driven and theory-driven, as we sought to improve model fit, but also to maintain the content validity of each subscale. Specifically, we made sure to retain at least one item each capturing avoidant and approach forms of external and introjected motivations. However, as has often been the case in prior SDT studies (Ryan & Deci, 2017), it was difficult to differentiate identified, integrated, and intrinsic motivation; thus, we ended up just retaining identified items. This 12-item model fit the data well and fit significantly better than the original 28-item model. We then replicated this model using Sample 5 data, and the model fit similarly well. Then to obtain factor loadings for Table 3 we merged all five datasets and reran the 12-item model. Standardized loadings were all adequate, ranging from .53-.91. External and introjected motivations were strongly and positively correlated ($r = .66$, $p < .001$), introjected and identified motivations were weakly and positively correlated ($r = .17$, $p < .001$), and external and identified motivations were moderately and negatively correlated ($r = -.27$, $p < .001$).

Measurement invariance

Second, we used this five sample combined dataset to evaluate measurement invariance across gender, ethnicity, and religious affiliation. Due to small sample sizes in some groups, for ethnicity we focused on European American, African American, Hispanic, and Asian American, and for religious affiliation we focused on Protestant, Catholic, and Latter-day Saints. We used the alignment approach in Mplus (Asparouhov & Muthén, 2014). This approach systematically uses the configural model to test for approximate invariance. Essentially, it identifies which items are invariant across which groups. All items were found invariant across gender and ethnicity using this approach, and only one item was variant across religious affiliation. One of the external religious motivation items (specifically Item 4, about engaging in religious behaviors to make someone happy who wants them to do the behavior) was higher for those with the Latter-day Saint religious affiliation. The Mplus alignment approach yields values for R-squared indicating the degree to which variance in the configural model loadings and intercepts is accounted for by variation in the latent means and variances across groups. The closer the value is to 1, the more confidence one can have in scalar invariance. For gender (.74), ethnicity (.76), and religious affiliation (.84), the majority of variation across groups was at the level of latent variable means and variances. In short, the measure seems largely invariant across gender, ethnicity, and religious affiliation. As such, we estimated multi-group models for each nominal variable (gender, ethnicity, and religious affiliation) specifying scalar invariance (invariance of configuration, factor

loadings, and intercepts). All models fit the data well (see fit indexes in Online Supplement B; https://osf.io/jh7ea/?view_only=de709f3f738b42d6b4a435562d67d1fd).

Reliabilities, correlations, and demographic comparisons

Third, once we had obtained the final set of 12 items, we used the five sample combined dataset to run additional preliminary analyses in SPSS. Among participants who identified with a religion ($n = 2185$), the items demonstrated adequate reliability for the external ($\alpha = .89$), introjected ($\alpha = .83$), and identified ($\alpha = .92$) motivation subscales. To examine relations between religious motivation and demographics we created composite scores by averaging the items for each type of motivation. Based on bivariate correlations, age was weakly and positively correlated with external religious motivation ($r = .16$, $p < .001$), moderately and positively correlated with introjected religious motivation ($r = .28$, $p < .001$), and weakly and negatively correlated with identified religious motivation ($r = -.05$, $p = .02$). An ANOVA comparing the religious motivations across gender found significant differences for external and identified, but not introjected, with males being higher on external but lower on identified than females, with small effects. An ANOVA examining religious motivations across ethnicity (excluding those classified as “other”) found ethnicity significantly linked to external and introjected religious motivations. African American and Asian American teens were significantly higher than European American and Hispanic teens on both types of motivation, but not different from each other. An ANOVA examined religious motivations across religious affiliation (focusing on Protestant, Catholic, and Latter-day Saint teens) found religious affiliation significantly linked to all three religious motivations, with Latter-day Saint being lowest and Catholics highest on external religious motivation, Latter-day Saint being lowest and Protestants being highest on introjected motivation, and Latter-day Saint being highest and Catholics being lowest on identified religious motivation. For details on these ANOVAs, see Online Supplement C (https://osf.io/jh7ea/?view_only=de709f3f738b42d6b4a435562d67d1fd).

Self-determination theory validity analyses

Fourth, we assessed validity by testing relations between the three types of religious motivation and the analogous three types of global and academic motivation. In Mplus, we conducted a confirmatory factor analysis in which we estimated latent variables for the three types of religious motivation, included observed scores for the three types of global and academic motivation, and then estimated all covariances between the nine motivation variables (see Table 4 for correlations). In all cases the strongest correlation between each type of religious motivation and the three types of global and academic motivation were with the corresponding type of motivation, providing evidence for convergent and discriminant validity.

Correlations with religious dimensions, adaptive outcomes, and maladaptive outcomes

Fifth, within each sample, we estimated bivariate correlations between latent variables for the three types of religious motivation and covariates (religiousness dimensions, adaptive outcomes, and

Table 4. Estimated bivariate correlations among religious motivation and other SDT motivation measures (Study 2).

SDT Motivation Measures	External Religious Motivation	Introjected Religious Motivation	Identified Religious Motivation
Global External	.24***	.45***	.25***
Global Introjected	.30***	.48***	.21***
Global Identified	-.09	.23***	.47***
External Academic	.23***	.39***	.24***
Introjected Academic	.22***	.43***	.39***
Identified Academic	.01	.25***	.46***

$N = 449$. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 5. Estimated bivariate correlations between religious motivations and covariates.

Covariates	External Religious Motivation	Introjected Religious Motivation	Identified Religious Motivation
	<i>r</i> [95% CI]	<i>r</i> [95% CI]	<i>r</i> [95% CI]
<i>Religiousness Dimensions</i>			
Public Rel. Involvement	.08 [−.02, .17]	.22*** [.10, .34]	.39*** [.33, .46]
Private Rel. Involvement	−.03 [−.20, .14]	.23*** [.10, .36]	.50*** [.43, .57]
Intrinsic Rel. Orientation	−.04 [−.47, .39]	.29 [−.01, .59]	.65*** [.58, .72]
Extrinsic Rel. Orientation	.24* [.05, .43]	.28** [.11, .45]	.19* [.02, .36]
Quest Rel. Orientation	.44*** [.32, .57]	.44*** [.30, .58]	.18* [.01, .35]
Religious Salience	−.03 [−.26, .19]	.25** [.09, .41]	.62*** [.56, .67]
Religious Identity	−.16 [−.48, .16]	.11 [−.10, .32]	.63*** [.56, .69]
Spirituality	−.25** [−.40, −.09]	.05 [−.10, .21]	.54*** [.40, .68]
Positive Religious Coping	−.25*** [−.32, −.18]	.06 [−.01, .14]	.62*** [.57, .67]
Negative Religious Coping	.38*** [.30, .46]	.31*** [.23, .39]	−.19*** [−.26, −.12]
Religious Doubt	.28*** [.19, .36]	.04 [−.03, .12]	−.42*** [−.49, −.35]
<i>Positive Outcomes</i>			
Self-regulation	−.21** [−.34, −.08]	−.03 [−.08, .03]	.25*** [.13, .37]
Self-esteem	−.25*** [−.32, −.18]	−.16*** [−.22, −.09]	.29*** [.22, .35]
Purpose	−.26*** [−.32, −.19]	−.09* [−.16, −.02]	.40*** [.33, .48]
Character	−.13 [−.29, .04]	−.05 [−.16, .06]	.23*** [.14, .32]
Civic Engagement	.04 [−.07, .15]	.12* [.002, .24]	.24*** [.16, .32]
School Engagement	−.24 [−.64, .16]	.01 [−.06, .08]	.27* [.03, .50]
<i>Negative Outcomes</i>			
Sexual Behavior	.05 [−.05, .14]	−.04 [−.10, .02]	−.14*** [−.20, −.08]
Pornography Use	.13*** [.06, .20]	.05 [−.02, .13]	−.16*** [−.23, −.10]
Substance Use	.12** [.04, .21]	.01 [−.06, .08]	−.17*** [−.24, −.10]
Cheating	.18* [.01, .35]	.11** [.04, .19]	−.15*** [−.22, −.08]
Externalizing	.21*** [.15, .27]	.09** [.03, .14]	−.15*** [−.21, −.10]
Internalizing	.30*** [.23, .37]	.18* [.01, .36]	−.17*** [−.23, −.10]

Rel. is an abbreviation for religious. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

maladaptive outcomes; see Table 5). One pattern was that for most of the adaptive dimensions of religiousness, the more internalized the religious motivation, the more strongly it was correlated with these other religiousness dimensions. As might be expected, the pattern of relations was flipped for correlations with negative religious coping and religious doubt. Another pattern is that generally (1) external religious motivation was negatively correlated with adaptive outcomes and positively correlated with maladaptive outcomes, (2) introjected was non-significantly or weakly correlated with both kinds of outcomes (with the pattern of signs being mixed), and (3) identified religious motivation was positively correlated with adaptive outcomes and negatively correlated with maladaptive outcomes. Significant correlations ranged from small to large. The largest correlations were for (1) external religious motivation correlating positively with quest religious orientations and negative religious coping; (2) introjected religious orientation correlating positively with quest religious orientations; and (3) identified religious motivation correlating positively with public and private religious involvement, intrinsic religious orientation, religious salience, religious identity, spirituality, positive religious coping, and purpose, and correlating negatively with religious doubt.

Regressions of three religious motivations predicting outcomes

Sixth, within each sample, we estimated regression coefficients of the three religious motivation latent variables predicting the adaptive and maladaptive outcomes (controlling for various available demographics; see Table 6). For each sample, we specified a single model with the three latent variables as predictors of all the outcomes and also estimated all covariances between the three religious motivation and between all the outcomes. One pattern was that identified religious motivation most frequently made significant unique contributions to the outcomes (specifically it was positively predictive of all six of the adaptive outcomes and negatively predictive of four of the maladaptive

Table 6. Structural equation models for religious motivations predicting outcomes.

Variable	External Religious Motivation	Introjected Religious Motivation	Identified Religious Motivation
	β [95% CI]	β [95% CI]	β [95% CI]
<i>Positive Outcomes</i>			
Self-regulation	-.17 [-.45, .11]	.05 [-.13, .24]	.20** [.07, .33]
Self-esteem	-.02 [-.15, .11]	-.17** [-.28, -.06]	.30*** [.21, .39]
Purpose	-.01 [-.13, .10]	-.11* [-.21, -.02]	.39*** [.31, .47]
Character	.04 [-.24, .32]	-.07 [-.23, .10]	.24** [.07, .41]
Civic Engagement	.11* [.02, .20]	-.06 [-.15, .03]	.22*** [.15, .28]
School Engagement	-.18 [-.67, .31]	.08 [-.14, .30]	.14** [.05, .23]
<i>Negative Outcomes</i>			
Sexual Behavior	.05 [-.11, .22]	-.04 [-.14, .06]	-.13* [-.26, -.004]
Pornography Use	.03 [-.06, .13]	.06 [-.02, .15]	-.14** [-.22, -.05]
Substance Use	.11* [.004, .21]	-.02 [-.12, .07]	-.12* [-.23, -.01]
Cheating	.14 [-.09, .37]	.01 [-.10, .12]	-.06 [-.15, .03]
Externalizing	.17** [.05, .29]	-.03 [-.12, .07]	-.09 [-.19, .01]
Internalizing	.18** [.05, .31]	.10 [-.06, .26]	-.11* [-.19, -.02]

All models included the following variables as controls, specified as predictors of all outcomes: age, gender, ethnicity, religious affiliation, household. Additionally, Studies 3 and 4 included social desirability and Studies 4 and 5 included pubertal timing as controls. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

outcomes). External religious motivation, on the other hand, only made significant unique contributions to four outcomes total, and introjected religious motivation two outcomes total. Significant effects ranged in size from small to medium. The largest effects were for identified religious motivation positively predicting purpose, self-esteem, character, and civic engagement.

Regressions comparing identified religious motivation and religious involvement

Seventh, within each sample, we estimated regression coefficients for the identified religious motivation latent variable and the observed public and private religious involvement variables predicting the adaptive and maladaptive outcomes (controlling for various available demographics; see Table 7). For each sample, we specified the three religiousness variables (identified religious motivation, public religious involvement, and private religious involvement) as predictors of all the outcomes, and estimated all covariances between the three religiousness predictors and between the outcomes. One pattern of findings was that identified religious motivation more frequently made a significant unique contribution to the outcomes than the two forms of religious involvement. Identified religious motivation positively predicted five adaptive outcomes and negatively predicted all six maladaptive outcomes. Public religious involvement only predicted one outcome, and private religious involvement only four. Significant effects ranged from small to medium in size. The largest effects were for identified religious motivation predicting purpose, self-esteem, and character, and for public religious involvement predicting civic engagement.

Interactions between identified religious motivation and religious involvement

Eighth, within each sample, we estimated models to test for interactions between identified religious motivation and religious involvement when predicting the outcomes. Within each sample two models were estimated, one for each type of religious involvement. In each model, we included the latent identified religious motivation, observed religious involvement (public or private), and the interaction between the two as predictors of all outcomes. We also estimated covariances between the two religiousness variables and between the outcomes. We found seven statistically significant interactions (see Table 8). All of them followed the same pattern such that links between religious involvement and

Table 7. Structural equation models for identified religious motivation and religious involvement predicting outcomes.

Variable	Identified Religious Motivation	Religious Involvement Public	Religious Involvement Private
	β [95% CI]	β [95% CI]	β [95% CI]
<i>Positive Outcomes</i>			
Self-regulation	.17*** [.11, .24]	-.07 [-.14, .0001]	.18*** [.08, .28]
Self-esteem	.25*** [.18, .33]	-.01 [-.13, .10]	.09 [-.003, .18]
Purpose	.31*** [.23, .38]	-.02 [-.11, .07]	.18*** [.09, .26]
Character	.20*** [.12, .27]	-.03 [-.13, .06]	.14 [-.05, .34]
Civic Engagement	.06* [.01, .11]	.23*** [.14, .33]	.18*** [.10, .25]
School Engagement	.20 [-.01, .41]	-.02 [-.11, .07]	.03 [-.09, .15]
<i>Negative Outcomes</i>			
Sexual Behavior	-.13*** [-.19, -.06]	-.03 [-.11, .04]	-.01 [-.15, .13]
Pornography Use	-.11*** [-.16, -.06]	-.04 [-.13, .05]	-.01 [-.14, .11]
Substance Use	-.12** [-.21, -.04]	-.02 [-.08, .05]	-.06 [-.13, .01]
Cheating	-.10* [-.18, -.02]	.05 [-.04, .14]	-.12** [-.21, -.04]
Externalizing	-.15*** [-.21, -.08]	.01 [-.10, .12]	.03 [-.13, .18]
Internalizing	-.16** [-.28, -.04]	-.02 [-.11, .08]	.01 [-.08, .10]

All models included the following variables as controls, specified as predictors of all outcomes: age, gender, ethnicity, religious affiliation, household. Additionally, Studies 3 and 4 included social desirability and Studies 4 and 5 included pubertal timing as controls. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 8. Structural equation models for interactions between identified religious motivation and religious involvement predicting outcomes.

Variable	Identified Relig Motivation X Public Relig Involvement	Identified Relig Motivation X Private Relig Involvement
	β [95% CI]	β [95% CI]
<i>Positive Outcomes</i>		
Self-regulation	.10** [.03, .17]	.11** [.04, .18]
Self-esteem	.05 [-.03, .13]	.08* [.004, .16]
Purpose	.12*** [.05, .19]	.11** [.04, .17]
Character	.04 [-.03, .11]	.04 [-.03, .10]
Civic Engagement	.03 [-.02, .08]	.01 [-.03, .05]
School Engagement	.06 [-.004, .12]	.06* [.002, .12]
<i>Negative Outcomes</i>		
Sexual Behavior	-.05 [-.16, .07]	-.07 [-.15, .02]
Pornography Use	-.04 [-.09, .01]	-.06* [-.10, -.01]
Substance Use	-.03 [-.10, .04]	-.02 [-.09, .05]
Cheating	-.05 [-.13, .04]	-.05 [-.12, .02]
Externalizing	-.01 [-.08, .05]	-.04 [-.12, .03]
Internalizing	-.04 [-.11, .04]	-.02 [-.09, .05]

Relig = Religious. All models included the following variables as controls, specified as predictors of all outcomes: age, gender, ethnicity, religious affiliation, household. Additionally, Studies 3 and 4 included social desirability and Studies 4 and 5 included pubertal timing as controls. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

the outcomes were stronger at higher levels of identified religious motivation. Specifically, public and private religious involvement were more positively predictive of self-regulation and purpose at higher levels of identified religious motivation (and the same was true for links between private religious involvement and self-esteem and school engagement), while private religious involvement was more negatively predictive of pornography use at higher levels of identified religious motivation.

Discussion

In the present study, we refined and validated a measure of religious motivation based on self-determination theory and examined the role of adolescent religious motivation in positive and negative youth outcomes. First, we refined the item wording and reduced the number of items (to 12) and found the three types of religious motivation to be correlated in expected ways. Second, we

found interesting associations between religious motivation and various demographics. Third, the three types of religious motivation generally correlated in expected ways with those from other self-determination theory measures of motivation. Fourth, in terms of correlations with youth outcomes, generally external religious motivation was maladaptive, identified religious motivation was adaptive, and introjected religious motivation was neutral or mixed. Fifth, identified religious motivation uniquely predicted outcomes more frequently than the other two types of religious motivation. Sixth, identified religious motivation also uniquely predicted outcomes more frequently than religious involvement. Seventh, in some cases identified religious motivation and religious involvement interacted – religious involvement mattered more at higher levels of identified religious motivation.

Arguably the most important finding from the present study was that identified religious motivation (a form of autonomous motivation), was the most adaptive and generally the most frequently and strongly associated with positive and negative youth outcomes, as compared to external and introjected motivation (two forms of controlled motivation). This is in line with a large body of self-determination theory research in a wide range of research areas (Ryan & Deci, 2017). Controlled motivations are typically driven by unmet psychological needs (i.e., the need for autonomy, competence, and relatedness). As such, they tend to produce behavior that is poorer quality and less persistent. However, as shown in the present study, in some cases controlled motivations backfire and produce patterns of behavior that are opposite of what may have been intended by socializing agents (e.g., parents, teachers, coaches, or religious leaders). This is supported by a study in another research area which found that while autonomous motivations for physical activity moderately and positively related to physical activity, controlled motivations are weakly and negatively related to behavior (Owen et al., 2014). In short, in some domains of life, such as religion and physical activity, autonomous motivations are consistently and substantially more ideal than controlled motivations, particularly external motivation.

Further, the present study made apparent the distinction between external and introjected controlled motivations. External motivations are driven by socially-contingent environmental consequences, while introjected motivations are driven by internal consequences, particularly self-evaluative affect. While prior studies in various domains have fairly consistently found external motivation to be maladaptive, findings for introjected are mixed, with it sometimes being maladaptive, sometimes adaptive, and sometimes neutral (Ryan & Deci, 2017). Our results echo this pattern in the religious domain. In essence, being religious based on anticipated environmental consequences may be hurtful to youth, while being religious based on anticipated internal consequences may not be hurtful, but it may not be helpful either.

Another key finding from the present study was that religious motivation and religious involvement play unique yet complementary roles in predicting positive and negative youth outcomes. This is in line with two prior studies that similarly found interactions between affective and behavioral dimensions of religiousness in predicting outcomes (Hardy et al., 2012; Jankowski et al., 2013). First of all, in the present study, identified religious motivation more frequently uniquely predicted youth outcomes than public or private religious involvement. Thus, being religious for more autonomous reasons may often be more important to youth outcomes than the actual level of religiousness. Second, in some cases, religious motivation and religious involvement interacted such that the link between religious motivation and youth outcomes was stronger at higher levels of religious involvement. Thus, not only is identified religious motivation sometimes a more salient predictor of youth outcomes than religious involvement, it might also enhance the role of religious involvement. In other words, if youth engage in religious behaviors for autonomous reasons, they may see more benefit from those behaviors than if they had engaged in them for no reason at all (i.e., amotivation), or for less optimal reasons (i.e., controlled motivations).

Lastly, we found several interesting demographic trends in religious motivation. First, females were lower on external religious motivation and higher on identified religious motivation. This is in line with a general trend found in prior studies of females being more religious than males on many dimensions of religiousness (Smith & Denton, 2005). Second, African American and Asian American teens were higher on external and introjected religious motivations than European American and Hispanic teens. This is

interesting in light of consistent evidence that African American teens are the most religious ethnic group on many dimensions of religiousness, while Asian Americans tend to be the least religious (Smith & Denton, 2005). Perhaps African American teens are more religiously engaged (e.g., in terms of religious behaviors and perhaps religious salience), but doing so more for external and introjected reasons. Third, Latter-day Saint teens (those affiliated with the Church of Jesus Christ of Latter-day Saints) were the lowest on external and introjected motivation, and the highest on identified motivation, compared to Protestant and Catholic teens. In other words, Latter-day Saint teens seem to have the most internalized religious motivation. Further, Catholic teens had the lowest levels of identified motivations. This pattern is congruent with prior evidence for high levels of religiousness among Latter-day Saint teens and low levels of religiousness among Catholic teens (Smith & Denton, 2005).

Limitations

The present findings should be interpreted in light of the study's limitations. First, all data reported herein were cross-sectional and correlational, thus inhibiting our ability to infer causality. Future research on religious motivation would benefit from experimental or longitudinal research design. Second, we relied on survey measures that were largely youth self-reports and in some cases parent reports. Researchers of religious motivation might in the future use other various measurement approaches, such as behavioral, observational, or physiological. Third, although we reported on multiple, diverse samples, none of them were nationally-representative of youth in the U.S. All were convenience samples. Thus, caution should be used in generalizing the findings. Fourth, we only retained subscales for external, introjected, and identified motivation, prohibiting us from being able to examine the relative roles of identified, integrated, and intrinsic religious motivation in adolescence. However, as is typical in much of the prior research (Ryan & Deci, 2017), we were unable to statistically differentiate the three forms of autonomous motivation. Thus, our decision to focus on the identified items shortened the measure and improve model fit, likely with minimal loss to the validity and utility of the measure.

Conclusion

In conclusion, this study has several implications for theory, research, and practice. In terms of implications for theory, we provided ample evidence validating self-determination theory in the domain of religiousness. In particular, our findings clearly demonstrate the relative adaptivity of autonomous religious motivations over controlled religious motivations. In terms of implications for research, we refined and validated a relatively short measure of religious motivation (RIS-12) grounded in self-determination theory. In terms of implications for practice, our findings warn against parents and religious leaders relying on punishments and rewards to motivate youth. Rather, parents and religious leaders might see better youth outcomes by using strategies that facilitate autonomous religious motivation, such as empathy, rationale, and choice (Deci et al., 1994). For instance, parents can show empathy to their youth regarding how difficult it may sometimes be to practice their religion, provide rationale for why certain prescriptions, proscriptions, or practices are warranted, and provide some flexibility for youth to choose how they will practice their religion. It is hoped that this study will prove fruitful in generating further research on adolescent religious motivation using a self-determination theory approach.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Data availability statement

The data that support the findings of this study are available from the corresponding author, SAH, upon reasonable request.

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