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Cover Page Footnote

This project was made possible by generous funding through the Olivet Nazarene University Honors Program. In addition, the mentorship and support of Dr. Kristian Veit, Dr. Dan Sharda, and the students in my Honors cohort were instrumental for the completion of this project.



**Religiosity and Relational Anxiety:
A Cross-Denominational Study**

Timothy J. Steininger

ACKNOWLEDGEMENTS

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ABSTRACT

Background: Prior research has provided evidence for a correlation between religiosity and anxiety, quantifiable differences between denominations, and a somewhat equivocal link between religiosity and social trust. **Methods:** This present study seeks to extend the existing body of knowledge by assessing the relationship between intrinsic religiosity and both trait and relational anxiety across denominational groups and by measuring the relationship between relational anxiety and social trust. Participants ($N = 1,905$) were asked to provide their informed consent as well as basic demographic information and answers to four surveys. **Results:** Analysis revealed a modest negative relationship between intrinsic religiosity and trait anxiety. Overall, a weak, positive relationship between intrinsic religiosity and relational anxiety was indicated, but a negative relationship was found for several denominations. Significant differences were observed in these correlations between Protestant Christians and Catholic Christians. Lastly, it was found that social trust and relational anxiety were not related. **Conclusion:** Two of the hypotheses were supported by the data, whereas two were not. One significant finding is that the relationships between intrinsic religiosity and trait and relational anxiety differed depending on participants' denominational affiliation.

Keywords: intrinsic religiosity, denominational differences, trait anxiety, relational anxiety, social trust.

LITERATURE REVIEW

The literature on the psychology of religion suggests a link between religiosity and improved mental health outcomes. These outcomes include a greater sense of subjective well-being (Cohen & Johnson, 2016; Wink & Dillon, 2003) and life satisfaction (Culver & Denton, 2017). Furthermore, higher levels of religiosity have also been correlated with a decrease in death anxiety (Cohen et al., 2005), effects of trauma (Ellison, 1991), and levels of anxiety (Abdel-Khalek, Nuño, Gómez-Benito, & Lester, 2019; Baker & Gorsuch, 1982; Lerman et al., 2004). This paper will focus on the relationship between religiosity and anxiety. Two important aspects of the relationship are the positive role of social support (Hughes et al., 2004) and the association between religious involvement and improved mental health (Rose, Finigan-Carr, & Joe, 2017). However, much about this relationship still remains unclear. For example, to the author's knowledge no prior study has evaluated a possible link between religiosity and anxiety as it is experienced in close, intimate relationships. In addition, though it is common practice in religious research to divide Protestantism into smaller denominations (Pew Research Center, 2018; Kellstedt & Smidt, 1991), no cross-denominational research on the relationship between religiosity and anxiety has done so, leaving important sources of variability unassessed.

Trait and relational anxiety

In the U.S., 31.2% of adults will suffer from a clinical anxiety disorder at some point in their lives (Biedel, Bulik, & Stanley, 2017, p. 121). Anxiety can generally be defined as a common emotion that is characterized by physical symptoms (faster heartbeat, feelings of tension) and thoughts or worries that something bad will happen (Biedel, Bulik, &

Stanley, 2017, p. 116). In the literature on anxiety, two types of anxiety are typically assessed: *state anxiety* and *trait anxiety*. This present study will only be concerned with trait anxiety; that is, the "stable tendency to attend to, experience, and report negative emotions such as fears, worries, and anxiety across many situations" (Gidron, 2013). Trait anxiety is an aspect of the personality construct neuroticism, and individuals high in trait anxiety are at an increased vulnerability for negative psychological outcomes. With this in mind, further research on and clinical attention towards neuroticism is desired (Gidron, 2013).

One component of anxiety that has yet to be evaluated in conjunction with religiosity is *relational anxiety*. Relational anxiety is the tendency to feel inhibition and distress in close relationships, and it is associated with dependent, desperate, and transactional relationships. (Snell, 1998). On the other hand, someone low in relational anxiety may focus more on the communal aspects of his or her relationships. Therefore, this paper uses relational anxiety to measure the health (or lack thereof) of one's attitude towards and emotions in close relationships. Due to the strong communal and social aspects of many religions (Hughes et al., 2004), it was expected that religiosity and relational anxiety would be negatively related. Relational anxiety was chosen as a construct for the purpose of assessing the quality of one's attitudes toward close relationships, rather than other constructs such as social anxiety that place the emphasis on public situations and performance (Craske et al., 2013). There have also been several studies that have examined the relationship between religiosity and a similar construct—social trust (Dingemans & Van Ingen, 2015; Welch, Sikkink, Sartain, & Bond, 2004). Social trust can be defined as social glue, or a general trust in others (Dingemans & Van Ingen, 2015). These studies have indicated a mixture of results, but due to the increasing amount of literature on religiosity and social trust, this paper seeks to evaluate the relationship between relational anxiety and *social trust* as a bridge between the present and prior research. It was hypothesized, therefore, that social trust and relational anxiety would be negatively related.

Intrinsic religiosity and cross-denominational research

In the latter half of the 20th century, a theoretical shift occurred regarding research into the psychology of religion. In response to several conflicting studies, Baker and Gorsuch (1982) recommended using a differentiated approach to measuring religiosity—*intrinsic religiosity* and *extrinsic religiosity*. Intrinsic religiosity is defined as viewing one's religion as an end in and of itself. An example of an intrinsic religiosity scale item would be: "Nothing is as important to me as serving God the best I know how." Extrinsic religiosity is defined as viewing one's religion as a means to some other end. An example of an extrinsic religiosity scale item would be: "It doesn't matter so much what I believe as long as I lead a moral life" (Hoge, 1972). This distinction, however, was not without controversy, specifically concerning the assessment of extrinsic religiosity. Reviewing the literature in 1990, Kirkpatrick and Hood suggested that the concept of extrinsic religiosity should be revised and could be better thought of as two distinct factors—personal extrinsic religiosity and social extrinsic religiosity. Their research indicated a unitary factor for intrinsic religiosity, but they argued that it might more accurately described as an assessment of religious commitment (Kirkpatrick &

Hood, 1990). For these reasons, in this present study intrinsic and extrinsic religiosity are not split into separate constructs for data analysis, as some previous studies have done (Baker & Gorsuch, 1982; Park, Cohen, & Herb, 1990). Rather, intrinsic religiosity is used as a general measure of religiosity, and extrinsic religiosity items are reverse scored, as specified by Hoge (1972). Other means of assessing religious commitment have been suggested, such as asking participants to weigh the relative importance of each item to their own religion or denomination. However, this method was found to be sufficiently interchangeable with more common means of evaluating religious commitment (Mockabee, Monson, & Grant 2001).

Past research has also indicated significant differences between denominations in terms of religious activity and mental health (van der Hooft et al., 2018; Park, Cohen, & Herb, 1990; Forbes & Zampelli, 1997). Park, Cohen, and Herb (1990) compared Protestants and Catholics in a variety of mental health outcomes, including trait anxiety. In the first part of the study, the results indicated a positive relationship between intrinsic religiosity and trait anxiety in Catholic participants and a negative relationship in Protestant participants, but the second part of the study revealed exactly the opposite. However, their study was underpowered, with only 128 total participants, and Protestantism was assessed as a single denomination. These are both weaknesses this present study seeks to ameliorate. In a Pew Research Center 2014 measure of congregational involvement, Catholic Christians scored lower on average than Protestant Christians (Sandstrom, 2016). This, coupled with the relationship between religious involvement and positive mental health outcomes (Rose et al., 2017) generated the hypothesis that the negative correlations between intrinsic religiosity and trait and relational anxiety would be stronger for Protestant Christians than for Catholic Christians.

The purpose of this study is to assess the relationships between intrinsic religiosity and trait and relational anxiety across denominations and to measure the relationship between social trust and relational anxiety. To connect to the broader discussion on religiosity and anxiety, this study uses intrinsic religiosity as a measure of religiosity, and trait and relational anxiety as measures of anxiety. This paper addresses the following research questions: How are intrinsic religiosity and trait anxiety related? How are intrinsic religiosity and relational anxiety related? How do these relationships differ across denominations? Lastly, how are social trust and relational anxiety related?

These research questions led to the following hypotheses:

Hypothesis 1: There will be a negative correlation between intrinsic religiosity and trait anxiety.

Hypothesis 2: There will be a negative correlation between intrinsic religiosity and relational anxiety.

Hypothesis 3: These relationships will be stronger for Protestant Christians than for Catholic Christians.

Hypothesis 4: There will be a negative correlation between social trust and relational anxiety.

METHODS

Participants

There were 1,905 participants included in data analysis. The sample included 1,050 female participants (M age = 35.4, SD = 12.8) and 815 male participants (M age = 33.5, SD = 11.4). The mean age was 34.6 years old (SD = 12.2). There were a variety of racial backgrounds represented: 58% non-Hispanic White, 22% Asian, 10% African American, 9% Hispanic White, 4% American Indian, 3% Other/Prefer not to answer, 2% Middle Eastern, and 1% Native Hawaiian. Participants were recruited using convenience sampling from both Amazon Mechanical Turk (MTurk) and a small, denominationally-affiliated Christian university in the Midwestern United States. Before the data set was cleaned, there were 2,180 total participants. Those who completed the survey on MTurk received \$0.10 compensation, and those who completed the survey at the Christian university were either entered into a gift card drawing or received extra credit for various undergraduate psychology courses. To account for the possibility of bot respondents on MTurk, two screening questions were used. One question that was added to the trait anxiety scale asked participants to select "Strongly Disagree." The other question, that asked participants to select "Very Characteristic of Me," was added to the Relational Anxiety scale. Participants who failed both screening questions were automatically removed from the data analysis (n = 271). Differences between those who passed both screening questions and those who only passed one (n = 202) were explored, and the latter group was eventually included in data analysis due to a lack of outliers and minimal influence on statistical outcomes. Additionally, four responses were thrown out due to the age of respondent less than 18. In the end, 1,831 individuals participated via MTurk, and 74 participated at the Christian university.

TABLE 1: DESCRIPTIVE STATISTICS

Denomination	n	Relational	Trait	Religiosity
None	39	23.9 (10.5)	29.4 (7.01)	33.10 (8.35)
Catholic	405	25.8 (9.36)	31.0 (6.73)	30.7 (6.78)
Protestant	72	24.1 (9.88)	29.7 (8.36)	35.7 (8.84)
Episcopalian	11	27.5 (10.5)	34.5 (6.89)	28.4 (10.0)
Orthodox	18	26.9 (7.97)	29.3 (4.71)	31.2 (8.95)
Baptist	89	22.7 (9.99)	30.5 (7.80)	36.3 (8.51)
Non-denominational	112	23.0 (9.74)	31.9 (7.45)	37.2 (7.68)
Mormon	13	20.2 (10.7)	27.2 (9.62)	41.1 (5.35)
Presbyterian	19	19.7 (9.91)	29.1 (6.71)	34.9 (8.24)
Pentecostal	23	23.0 (9.91)	29.7 (9.19)	36.7 (9.12)
Evangelical	16	20.4 (8.93)	28.9 (3.95)	36.3 (8.31)
Lutheran	33	24.2 (11.1)	32.3 (9.94)	28.2 (10.5)
Methodist	30	24.6 (11.4)	32.0 (7.92)	32.3 (10.2)
Wesleyan	20	22.4 (8.83)	31.1 (4.53)	36.1 (5.29)
Other	87	26.2 (9.71)	31.6 (6.60)	34.7 (6.78)
Christian	24	25.3 (10.5)	29.9 (6.56)	36.3 (5.77)

Note. Mean scores are listed above standard deviations, which are in parentheses. Adventist, Anglican, Jehovah's Witness, and Reformed denominational groups were removed from the table for $n < 10$.

Materials

Trait anxiety was measured using participants' self-report scores on the 16PF Anxiety Scale (Goldberg et al., 2006). This scale, originally consisting of ten items, was comprised of eleven items on the online survey (including one screening question).

Answers were scored on a 5-point Likert scale, with endpoints ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree" (Cronbach's $\alpha = .84$), and participants received a composite score ranging from 10-50. This scale has been used previously as a measure of anxiety in research on the psychology of religion (Abdelsayed, Bustrum, Tisdale, Reimer, & Camp, 2010; Westman & Brackney, 1990). Questions on the scale were intended to assess each individual's tendency to worry, ruminate over negative events, feel guilty, or experience other similar emotions or cognitions. An example of an item on this scale is, "Typically I feel threatened easily."

Intrinsic Religiosity was assessed using participants' self-report scores on Hoge's Intrinsic Religious Motivation Scale (Hoge, 1972). This scale contains ten items and is answered on a 5-point Likert scale with endpoints ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree" (Cronbach's $\alpha = .84$), and participants received a composite score ranging from 10-50. This scale has demonstrated sufficient content validity in the past (Hoge, 1972), and is intended to measure the extent that each respondent views his or her religious participation as its own end (an intrinsic good), rather than as a means to some other end (an extrinsic good). An example of an item on this scale is, "My faith sometimes restricts my actions."

Relational anxiety was assessed using participants' self-report scores on the relational anxiety subscale from Snell's Relationship Awareness Questionnaire (Snell, 1998). This scale was comprised of ten items on the online survey (including one screening question) and nine items on the in-person survey. This scale is used to evaluate how uncomfortable or anxious an individual is in close relationships, and high relational-anxiety is associated with dependent, desperate, and transactional relationships, rather than communal ones (Snell, 1998). Responses were scored on a 5-point Likert scale, with endpoints ranging from 1 = "Not at all characteristic of me" to 5 = "Very characteristic of me" (Cronbach's $\alpha = .94$), and participants received a composite score ranging from 9-45. An example of an item from this scale is, "It takes me time to get over my shyness in a new close relationship." Test-retest reliability of this scale has been shown to be sufficient (Snell, 1998). In addition, evidence for convergent validity scale indicated that high relational anxiety was correlated with relational-depression and less relational-esteem (Snell, 1998).

Social trust was measured using participants' self-report answers to a single item. This item asks, "Generally speaking, would you say that most people can be trusted?" This single item has been used often in the literature to measure this construct (Dingemans & van Ingen, 2015). Responses were measured dichotomously, with 0 = "Can't be too careful" and 1 = "Most people can be trusted."

Procedures

The independent variable in this study was denominational affiliation. Within the Christian faith, there were twenty levels to this independent variable. Participants were grouped into these levels based on their responses to demographic questions. Each participant was included in only one level, with the exception of Christian respondents, who were included in their respective denominational subgroups as well. Descriptive statistics for the denominational groups can be found in Table 1. All participants were

asked to complete a survey comprised of four scales and demographic questions, including age, ethnicity, sex, marital status, religious affiliation, and, when applicable, denominational affiliation. These four scales were designed to measure the following dependent variables: intrinsic religiosity, trait anxiety, relational anxiety, and social trust. The relationships between these variables were assessed, as well as the differences between levels of the independent variable.

A researcher was present for each of the in-person trials. Participants were handed an informed consent sheet and verbally reminded that they were volunteers and were free to leave at any time. Participants were also instructed to address any questions, concerns, or comments to the researcher or University Institutional Review Board. Both parties' contact information was listed at the bottom of the informed consent document. The researcher instructed participants to read the informed consent document and then told them they could come to the front of the room to collect their survey, indicating their informed consent to continue participating. Completed surveys were placed on a chair at the front of the room, and participants signed their name and their class/professor's name on a sign-out sheet.

Participants responding on MTurk were first provided with an informed consent page and were required to indicate their consent by checking a box before continuing on to the rest of the survey. The same procedure was used for those at the Christian university completing the Survey Monkey.

RESULTS

As noted previously, participants who failed both screening questions were automatically removed from data analysis. Participants who failed one screening question and passed the other were dummy coded (0 = passed, $n = 1704$; 1 = failed, $n = 201$). Levene's test was significant, so to account for unequal variances a Welch's t -test was used to assess differences between the groups. Analysis between the passing group ($M = 24.5$, $SD = 9.90$) and the failing group (mean = 27.7, $SD = 9.34$) indicated a significant difference in terms of relational anxiety $t(256) = -4.57, p < .001, d = -.33, CI(95\%) = -4.59, -1.83$. To assess the extent of this issue, relational anxiety scores were transformed into z -scores, and these scores were screened for any outliers ($z =$ greater than +3 or less than -3). No such scores were found. Furthermore, a separate data set was created with all screened respondents removed. Correlations were rerun for the entire participant pool and also several key denominations, with negligible differences emerging (all changes in correlation magnitude were $< .02$). For this reason, screened data was included in data analysis. A second Welch's t -test was used to compare participants from the Christian university with those from MTurk. In terms of intrinsic religiosity, participants from the Christian university ($M = 33.9, SD = 5.82$) reported significantly greater scores than participants from MTurk ($M = 29.9, SD = 8.92$), $t(87.5) = 5.57, p < .001, d = -.45, CI(95\%) = -5.35, -2.53$. In terms of relational anxiety, participants from the Christian university ($M = 21.9, SD = 8.47$) reported significantly lower scores than participants from MTurk ($M = 25.0, SD = 9.92$), $t(81.3) = -3.015, p < .01, d = .31, CI(95\%) = 1.04, 5.06$. No significant differences were observed between the two groups in terms of trait anxiety

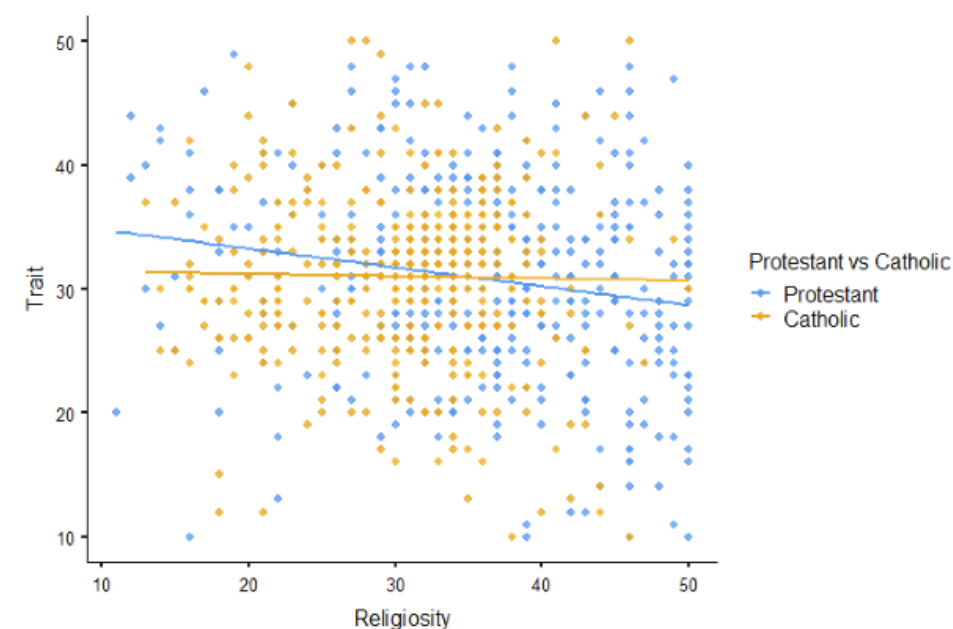
TABLE 2: CORRELATION MATRIX FOR STUDY VARIABLES

Variable		1	2	3
1. Trait	Pearson's r	—		
	p -value	—		
	95% CI Upper	—		
	95% CI Lower	—		
2. Religiosity	Pearson's r	-0.09 ***	—	
	p -value	< .001	—	
	95% CI Upper	-0.04	—	
	95% CI Lower	-0.13	—	
3. Relational	Pearson's r	0.51 ***	0.05 *	—
	p -value	< .001	0.02	—
	95% CI Upper	0.54	0.10	—
	95% CI Lower	0.48	0.01	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$ Trait = Trait Anxiety; Religiosity = Intrinsic Religiosity; Relational = Relational Anxiety.

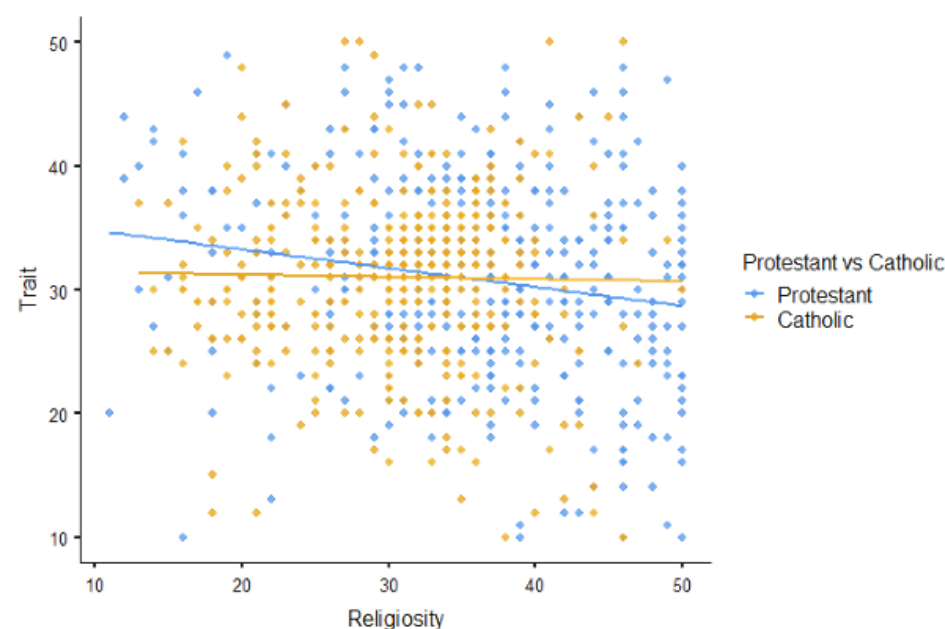
Using the entire data set, a correlation matrix was created using the entire sample and the variables trait anxiety, relational anxiety, and intrinsic religiosity (Table 2). The correlation matrix assessed each relationship using Pearson's correlation coefficient. Trait anxiety and relational anxiety were moderately and significantly correlated. Intrinsic religiosity was weakly but significantly negatively related to trait anxiety, supporting hypothesis 1. However, an interesting phenomenon was observed with relational anxiety. Though it was hypothesized that there would be a negative relationship between intrinsic religiosity and relational anxiety, the results indicated that there was actually a weak and significant positive relationship between these two variables. To control for trait anxiety, a two-step linear regression was created. The initial model used only trait anxiety as a predictor variable for relational anxiety, whereas the final model used both trait anxiety and intrinsic religiosity as predictor variables. The final model did a significantly better job at accounting for the variability in relational anxiety than the initial model, $F(1900) = 25.5, p < .001$. In the final model (adjusted R-squared = 0.27), intrinsic religiosity and trait anxiety were both significant predictors of relational anxiety, indicating that the observed positive relationship was not due to the influence of trait anxiety. For the entire group, then, hypothesis 2 was not supported. For the entire data set, the relationship between intrinsic religiosity and relational anxiety was modestly positive. However, the same did not hold true when the relationship was assessed for each group. To compare participants from Protestant and Catholic denominations, a dummy-coded variable was created, with Protestant = 0 and Catholic = 1. Christian respondents who indicated a Catholic denomination were coded as Catholic, and Christian respondents who listed a Christian denomination that was not Catholic, Orthodox, Mormon, or Jehovah's Witness were coded as Protestant. Mormons and Jehovah's Witnesses were excluded on the basis of their own statements

of affiliation (Lindsay, 2006, p. 99; Jehovah's Witnesses, 2020). This Protestant group included those from Baptist, Non-denominational, Episcopal, Presbyterian, Pentecostal, Evangelical, Lutheran, Anglican, Adventist, Methodist, Wesleyan, and Reformed denominations, as well as those who indicated their denomination was Protestant. For the Protestant-coded group, there was a significant and weak negative relationship between intrinsic religiosity and trait anxiety $r(538) = -0.18, p < .001$ and between intrinsic religiosity and relational anxiety $r(538) = -0.12, p = .003$. For the Catholic group, there was a negative, non-significant relationship between intrinsic religiosity and trait anxiety $r(404) = -0.02, p = .712$, and a positive, significant relationship between intrinsic religiosity and relational anxiety $r(404) = 0.19, p < .001$. Using an r -to- z transformation table and a Critical Ratio test, the difference between the correlation of intrinsic religiosity and trait anxiety for Protestants and Catholics was found to be significant $z = 2.13, p < .05$. The difference between the correlation of intrinsic religiosity and relational anxiety for Protestants and Catholics was also found to be significant $z = 4.41, p < .01$. These results, depicted in **Figure 1**, supported *hypothesis 3*.



Note. Trait = Trait Anxiety; Religiosity = Intrinsic Religiosity

Figure. 1 A and B Catholic and Protestant Scatterplots Relationships between intrinsic religiosity and trait and relational anxiety for both Catholic and Protestant Christians.



Note. Trait = Trait Anxiety; Religiosity = Intrinsic Religiosity

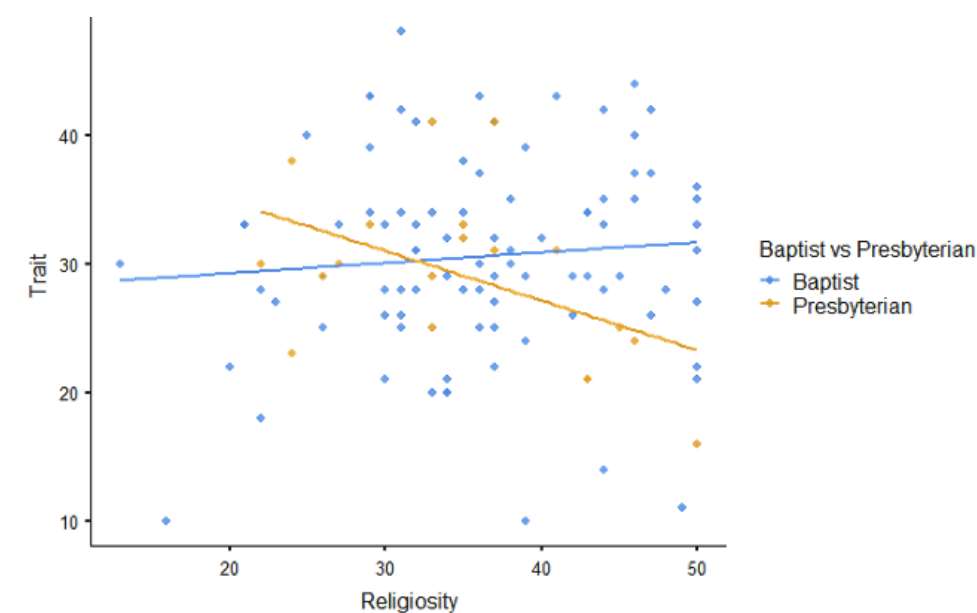


Figure. 2 Baptist and Presbyterian Scatterplot Relationships between intrinsic religiosity and trait and relational anxiety for both Presbyterian and Baptist Christians.

Further denominational differences were assessed by transforming correlation coefficients into z -scores for comparison using a r -to- z transformation table and a Critical Ratio test. Only denominational groups with ten or more participants were included in analysis, excluding Reformed, Anglican, Adventist, and Jehovah's Witness believers. Between Protestant denominations, only one significant correlational difference existed (**Figure 2**). This difference was found between Presbyterian Christians, who demonstrated the strongest negative relationship between trait anxiety and intrinsic religiosity $r(19) = -0.47, p = .40$, and Baptist Christians $z = -2.15, p < .05$. This relationship was positive for the latter group $r(85) = 0.09, p = .421$, the only Christian denomination that showed this effect. No correlation between relational anxiety and intrinsic religiosity was found to be significantly different among Protestant Christians, with the biggest difference in magnitude observed between Evangelical Christians $r(14) = -0.45, p = .081$ and Baptist Christians $r(85) = 0.08, p = .479$. However, the correlations differed substantially between denominations, indicating that the lack of statistically significant results may have been due to small sample sizes and, therefore, lack of statistical power.

To assess the relationship between social trust and relational anxiety, a Welch's t -test was conducted using social trust as the independent variable. Groups were comprised of those who answered "can't be too careful" = 0 ($M = 24.9, SD = 10.2$) and "most people can be trusted" = 1 ($M = 24.8, SD = 9.55$). The results did not support the hypothesis that relational anxiety and social trust would be negatively related $t(1877) = 0.192, p = .85, d = 0.009, CI(95\%) = -0.80, 0.98$.

DISCUSSION

The intent of this study was not to elevate any religion or denomination as superior nor to attack any as inferior. Rather, the goal was to delve more deeply into the relationship between religiosity and anxiety and to generate further research. If the observed differences between denominations persist through replication, it may be worth exploring what mechanisms could be at work that may be influencing these relationships. Clearly, the results of this study indicate that there is more to the story than a simple negative relationship between religiosity and anxiety.

In the present study, the correlations between intrinsic religiosity and trait and relational anxiety varied greatly between denominations. For some denominations, higher reported intrinsic religiosity was associated with both lower reported trait and relational anxiety. For others, the variables were either positively related or no significant relationship was found. Further research could seek to evaluate whether there are more specific facets of religiosity, such as religious commitment or congregational involvement, that predict better outcomes for relational anxiety. Further research could also assess whether there are tangible ways different denominations manifest these facets more than others.

In addition, though research on religion typically divides Protestantism into smaller denominations, there tend to be three main groups (or traditions) that each of these smaller denominations fall into—evangelical, mainline, and historically-black—each

with their own distinct histories and theologies (Pew Research Center, 2008). Future research could look at whether the variability in these relationships tends to occur primarily between denominations of the same tradition or if there is homogeneity within each tradition and the variability primarily occurs between traditions.

The first hypothesis was that there would be a negative relationship between intrinsic religiosity and trait anxiety. The data supported this hypothesis by indicating a weak but significant negative relationship. Previous research has similarly indicated a weak, negative relationship, although the relationship in the present study was slightly weaker than that observed in other studies. This could be due to the great variety of religions and denominations represented in the sample, contrasting with the more uniform samples other studies have used (Abdel-Khalek et al., 2019; Baker and Gorsuch, 1982; Park, Cohen, & Herb, 1990).

The second hypothesis was that there would be a negative relationship between intrinsic religiosity and relational anxiety. The data indicated a weak and significant positive relationship between these variables, and this result held true even when a two-step linear regression was used to control for trait anxiety. However, when split into respective religious and denominational groups, there were several groups with significant positive relationships and several with significant negative relationships.

The third hypothesis was that these negative correlations would be stronger for Protestant Christians than for Catholic Christians. Protestant Christians demonstrated significant negative relationships between intrinsic religiosity and trait and relational anxiety, whereas Catholic Christians demonstrated a non-significant negative relationship between intrinsic religiosity and trait anxiety and a significant positive relationship between intrinsic religiosity and relational anxiety. When these correlations were compared, the difference in correlations between Protestant and Catholic Christians was significant.

Lastly, the fourth hypothesis was that there would be a negative relationship between social trust and relational anxiety. The data did not support this prediction.

These results relate to the existing body of research in several ways. Differences between Catholic and Protestant Christians have been evaluated previously in terms of both mental health and behavior (Park, Cohen, & Herb, 1990; Forbes & Zampelli, 1997). In the present study, a significant difference was observed between Catholic and Protestant Christians in terms of the relationships between intrinsic religiosity and trait and relational anxiety. These relationships also differed across Protestant denominations, indicating that researchers engaging in cross-denominational research of this kind may be better suited treating Protestantism as a collection of discrete denominations, rather than a single unitary denomination. Lastly, there was an observed relationship between intrinsic religiosity and another component of anxiety—relational anxiety—although the direction of this relationship varied for different denominations. This contributes to the broader conversation surrounding the relationship between religiosity and anxiety

by measuring a more specific facet of anxiety; namely, how inhibited or uncomfortable one is in close, intimate relationships. It also could inform future research by providing evidence for a difference in correlations depending upon the denomination of the participant.

The present study had several limitations, including those inherent in self-report measures. As participants were assessing themselves, their scores could have been influenced by a lack of objectivity or by a desire to give whatever answer would be most socially accepted. An additional limitation is the inability of observational data to allow for directional or causal conclusions. Though it was observed that those scoring higher in intrinsic religiosity tended to score slightly lower in trait anxiety, it is unknown whether there is some other factor that could be influencing both variables. Further, if there is a direct effect, based on this study there is no way of determining directionality: it could be that some who are less trait anxious simply select themselves into more religious environments than others who are high in trait anxiety. The same can be said for relational anxiety. A third limitation is the Intrinsic Religious Motivation Scale's vulnerability to social desirability bias (Hoge, 1972), especially within the context of a Christian university such as the one used in this study, where abiding by a Christian lifestyle and chapel attendance are both mandatory. It has likewise been noted that the idea of intrinsic religiosity could be more specifically suited to Protestantism's concept of religiosity than to that of other religious (Masters, 2013) or denominational groups (Cohen et al., 2005). Future research could include a measure of the frequency of religious behaviors and, additionally, ask participants to rate the importance of each behavior to their personal religion or denomination (Mockabee, Monson, & Grant, 2001).

One important note regarding these findings relates to those who identify with the Mormon faith. This group demonstrated the strongest negative correlations between intrinsic religiosity and both trait anxiety and relational anxiety. Measuring congregational involvement in three ways—congregational membership, frequency of attendance at worship services, and frequency of attendance at religious small group gatherings—Mormons are some of the most involved in their congregations (Sandstrom, 2016). In fact, Mormons score higher in congregational involvement than Catholic, Evangelical Protestant, Mainline Protestant, and Orthodox Christians (Appendix A). Further research could examine whether the differences between denominations in these correlations is related to the amount of congregational involvement typical of that denomination.

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APPENDIX A

How involved are Christians in their congregations?

% of people in each religious group who have high/medium/low level of involvement in their congregations

	High	Medium	Low
All Christians	30%	58	12
Mormon	67	29	4
Jehovah's Witness	64	35	2
Evangelical Protestant	43	49	8
Historically black Protestant	41	53	6
Mainline Protestant	20	61	19
Orthodox Christian	20	68	11
Catholic	16	70	14

Note: Figures may not add to 100% due to rounding.

Source: 2014 U.S. Religious Landscape Study, conducted June 4-Sept. 30, 2014.

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