



Can Childhood Experiences Predict Religiosity and Doubt in Adults? An Empirical Analysis of Muslims

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Apostasy and atheism have been on the rise in America in the past decade.¹ In a 2019 survey, more than one in four Americans (26%) identified as atheist, agnostic or “nothing in particular,” up from 17% in 2009.² American Muslims are no exception to this statistic, as 24% of those raised Muslim report no longer identifying with Islam in adulthood, predominantly moving towards atheism or no religion.³ While these numbers are staggering, they do not include the large number of Americans struggling with religious doubt.⁴ While many people have questions related to religious teachings at some point in their lives, these questions are often resolved, allowing them to maintain or even strengthen their faith. However, in other cases, religious doubt may grow until individuals reject religious teachings or leave their religion because their concerns have not been adequately addressed.⁵ Additionally, people experiencing religious doubt may also experience more psychological distress and report worse physical health than those who do not report doubt.^{6, 7, 8} Thus, with these concerns that religious doubts for Muslims may lead to a loss of faith, coupled with the negative psychological consequences associated with religious doubts, we investigate the antecedents and correlates of religious doubt of Muslims in America.

¹ “10 Facts about Atheists,” Pew Research Center, 2019, <https://www.pewresearch.org/fact-tank/2019/12/06/10-facts-about-atheists/>.

² “In U.S., Decline of Christianity Continues at Rapid Pace,” Pew Research Center, 2019, <https://www.pewforum.org/2019/10/17/in-u-s-decline-of-christianity-continues-at-rapid-pace/>.

³ “The Share of Americans Who Leave Islam Is Offset by Those Who Become Muslim,” Pew Research Center, 2018, <https://www.pewresearch.org/fact-tank/2018/01/26/the-share-of-americans-who-leave-islam-is-offset-by-those-who-become-muslim/>.

⁴ “Two-Thirds of Christians Face Doubt,” Barna, July 25, 2017, <https://www.barna.com/research/two-thirds-christians-face-doubt/>.

⁵ Bruce Hunsberger, Michael Pratt, and S. Mark Pancer, “A Longitudinal Study of Religious Doubts in High School and Beyond: Relationships, Stability, and Searching for Answers,” *Journal for the Scientific Study of Religion* 41, no. 2 (2002): 255–66.

⁶ Kenneth I. Pargament, *The Psychology of Religion and Coping: Theory, Research, Practice* (New York: Guilford Press, 1997).

⁷ Neal Krause, Berit Ingersoll-Dayton, Christopher G. Ellison, and Keith M. Wulff, “Aging, Religious Doubt, and Psychological Well-Being,” *The Gerontologist* 39, no. 5 (1999): 525–33.

⁸ Kathleen Galek, Neal Krause, Christopher G. Ellison, Taryn Kudler, and Kevin J. Flannelly, “Religious Doubt and Mental Health Across the Lifespan,” *Journal of Adult Development* 14, no. 1–2 (2007): 16–25.

Theoretical framework

The Qur'an uses various terms to describe feelings of doubt, including *rayb* and *shakk*. While each term is unique in its meaning, they both refer to a psychological state of doubt.⁹ Religious doubt refers to a feeling of uncertainty towards, and a questioning of, religious teachings and beliefs.¹⁰ Religious doubt can have multiple causes and is experienced in various ways. All religious doubts are not qualitatively the same; they may be classified as soft or hard, as conceptualized by Abdul-Rahman and Khan.¹¹ Soft doubts are acute and may arise from fleeting thoughts that are generally not serious threats to the person's religious beliefs or well-being. Soft doubts may also represent minor religious questions or momentary concerns that do not cause any lingering discomfort in the individual. Hard doubts, on the other hand, represent chronic doubt that persists in the mind and may cause serious uncertainty and hesitation in the individual towards their religion.¹² All doubts, soft or hard, are subjective beliefs in the mind of the individual, and what constitutes a soft doubt to one person may represent a hard doubt to another person (or no doubt to yet another). Religious doubt is a complex multidimensional construct, and prior research has investigated different pathways to it.

Based on intensive interviews with a set of Muslim community leaders in the US, Chouhoud classified the pathways to religious doubt into three categories: (1) moral and social concerns; (2) philosophical and scientific concerns; and (3) personal trauma.¹³ Moral and social concerns include doubts that pertain to issues of religious intolerance, religious hypocrisy, gender rights and roles, and a low sense of belonging to one's religious community. Philosophical and scientific

⁹ Although the exact meaning of each word has been debated and requires a more thorough examination, some scholars have suggested that *shakk* refers to a wavering belief, whereby the individual is unsure whether to accept or reject the belief. It is as if someone is fifty-fifty in their belief of something. *Rayb* has been said to be a more intense form of doubt that is accompanied by anxiety and distress. For a longer discussion in Arabic on these terms, see https://www.alukah.net/literature_language/0/27973/.

¹⁰ Bruce Hunsberger, Barbara McKenzie, Michael Pratt, and S. Mark Pancer. "Religious Doubt: A Social Psychological Analysis," *Research in the Social Scientific Study of Religion* 5 (1993): 27–51.

¹¹ Zohair Abdul-Rahman and M. Nazir Khan, "Shakk (2) – The Psychology of Doubt," *Spiritual Perception*, September 17, 2017, <https://spiritualperception.org/shakk-2-the-psychology-of-doubt/>.

¹² Abdul-Rahman and Khan, "Shakk."

¹³ Youssef Chouhoud, "Modern Pathways to Doubt in Islam," *Yaqeen Institute for Islamic Research*, October 24, 2016, <https://yaqeeninstitute.org/youssef-chouhoud/modern-pathways-to-doubt-in-islam/>.

concerns include doubts stemming from perceived conflicts between religion and science (e.g., evolution), the problem of evil and suffering in the world, and uncertainty about the existence of God. Personal trauma includes experiences with racism, and various types of abuse, including child abuse, spousal abuse, or spiritual abuse. Considering the numerous pathways to doubt, it is important to understand the factors that bolster or counter these pathways. As religious beliefs are internalized through a variety of life experiences, we consider the onset of religious doubt as the result of a developmental process. The experiences that shape an individual's religious views span infancy to adulthood and, through understanding the process of religious socialization, we can work towards interventions that prevent the development of hard religious doubts and help individuals cope with existing doubts.

In addition to conceptualizing religious doubt as soft or hard regarding a particular issue (e.g., a specific moral or social concern, philosophical or scientific concern, or personal trauma), religious doubt may also be thought of as a more general attitude of religious skepticism. Religious skepticism refers to a disposition that includes constantly questioning religious matters and searching for answers to existential questions. General religious skepticism has been hypothesized to relate to having specific hard doubts. In a recent study of religious doubt in Muslims, Chouhoud found that religious questioning and skepticism was indeed correlated with having more specific religious doubts.¹⁴ Therefore, we investigate both specific hard doubts and religious skepticism as aspects of religious doubt.

Religious doubt and religious socialization

Having doubt does not negate one's belief, and people can be religious and at the same time experience religious doubts. In fact, the role of doubt in developing deeper faith has long been discussed in both classical Islamic and Western thought.

¹⁴ Youssef Chouhoud, "What Causes Muslims to Doubt Islam? A Quantitative Analysis," *Yaqeen Institute for Islamic Research*, February 13, 2018, <https://yaqeeninstitute.org/youssef-chouhoud/what-causes-muslims-to-doubt-islam-a-quantitative-analysis/>.

¹⁵ Within the Islamic context, individuals are commanded to seek knowledge and perform religious actions as a means of coming closer to Allah and increasing in their conviction. Similarly, those who experience doubt are also encouraged to be patient, to find answers through seeking knowledge, and to perform religious acts, such as prayer, supplication, and reading the Qur'an.¹⁶ Thus, although religious people may experience religious doubt, increased religiosity is considered a means of counteracting and, in some cases, preventing the onset of doubt. Therefore, understanding the development of religiosity will help us understand the development of doubt.

Prior research on religious socialization has identified numerous correlates of religiosity that are informative in developing models explaining the development of hard religious doubts. There are several religious socializers in a person's life who help shape one's religious beliefs and practices. The first and most important of these socializers are parents, who influence their children's beliefs and behaviors through modeling, encouragement, and reinforcement, coactivity, and providing religious materials and experiences.^{17, 18} From an Islamic perspective, parents may encourage prayer, encourage reading the Qur'an, engage in conversations about religious values and rules, and observe religious holidays with their children. In addition to the direct effects that parents have in shaping their children's religiosity, they also indirectly support their children's religiosity by channeling them into experiences that reinforce desired religious values.¹⁹ For example, Muslim parents may select educational experiences and peer influences that they believe will positively influence their children's religiosity. Taken collectively, one of the strongest predictors of stronger religious beliefs and fewer

¹⁵ Keith A. Puffer, Kris G. Pence, T. Martin Graverson, Michael Wolfe, Ellen Pate, and Stacy Clegg, "Religious Doubt and Identity Formation: Salient Predictors of Adolescent Religious Doubt," *Journal of Psychology and Theology* 36, no. 4 (2008): 270–84.

¹⁶ Chouhoud, "What Causes Muslims to Doubt Islam?"

¹⁷ Jacquelynne S. Eccles, Amy Arberton, Christy Miller Buchanan, Jacobs Janis, Constance Flanagan, and Rena Harold, "School and Family Effects on the Ontogeny of Children's Interests, Self-Perceptions, and Activity Choices," *Developmental Perspectives on Motivation* 40 (1993): 145–208.

¹⁸ Christian Smith, Bridget Ritz, and Michael Rotolo, *Religious Parenting: Transmitting Faith and Values in Contemporary America* (Princeton: Princeton University Press, 2019).

¹⁹ Harold S. Himmelfarb, "The Study of American Jewish Identification: How It Is Defined, Measured, Obtained, Sustained and Lost," *Journal for the Scientific Study of Religion*, 1980, 48–60.

doubts is the extent to which religion is emphasized in a person's childhood by parents and other adult socializers.²⁰

In addition to early religious exposure in the home and in formal educational settings, friends have been found to influence an individual's religious beliefs and practices.^{21, 22} Friends may influence an individual's religious beliefs and behaviors through several mechanisms including modeling, social reinforcement, peer pressure, and sharing religious experiences and ideas. Prophet Muhammad ﷺ astutely remarked, "A person follows the religion of his close friend; so, each one should consider whom he makes his close friend."²³ Prior research has found that religious friends positively influence an individual's religiosity, whereas having fewer religious friends is associated with engaging in riskier behavior, such as drug use and sexual relations.^{24, 25}

Personal beliefs and behaviors

In addition to the influence of parents and peers, internalized religious beliefs and practices are related to the presence or absence of religious doubts. Holding hard doubts reflects a mismatch between an individual's personal beliefs and behaviors and the orthodox beliefs and practices of their faith. Research on Christian samples has found that holding orthodox beliefs and attending church are negatively correlated with religious doubts. This implies that levels of religious doubt are lower in people who hold orthodox beliefs²⁶ and who attend church more

²⁰ Hunsberger, Pratt, and Pancer, "Longitudinal Study of Religious Doubts," 255–66.

²¹ Pamela E. King, James L. Furrow, and Natalie Roth, "On Adolescent Religiousness," *Journal of Psychology and Christianity* 21, no. 2 (2002): 109–120.

²² Marie Cornwall, "The Influence of Three Agents of Religious Socialization: Family, Church, and Peers," in *The Religion and Family Connection: Social Science Perspectives*, ed. Darwin L. Thomas (Provo, UT: Religious Studies Center, Brigham Young University, 1988), 207–31, <https://rsc-legacy.byu.edu/archived/religion-and-family-connection-social-science-perspectives/chapter-11-influence-three>.

²³ *Sunan Abi Dawud*: chapter "with whom we are ordered to accompany."

²⁴ Stephen J. Bahr and John P. Hoffmann, "Religiosity, Peers, and Adolescent Drug Use," *Journal of Drug Issues* 38, no. 3 (2008): 743–69.

²⁵ Antoinette Landor, Leslie Gordon Simons, Ronald L. Simons, Gene H. Brody, and Frederick X. Gibbons, "The Role of Religiosity in the Relationship between Parents, Peers, and Adolescent Risky Sexual Behavior," *Journal of Youth and Adolescence* 40, no. 3 (2011): 296–309.

²⁶ Bob Altemeyer, *Enemies of Freedom: Understanding Right-Wing Authoritarianism* (San Francisco: Jossey-Bass, 1988).

frequently.²⁷ In addition to adherence to orthodoxy, an individual's motivation towards religion is also related to doubt. People who are more interested and intrinsically motivated to practice their religion report lower levels of doubt than those with extrinsic motivation.²⁸ Thus, the more personally important and meaningful religion is to an individual, the less likely they are to experience hard doubts.

The present study

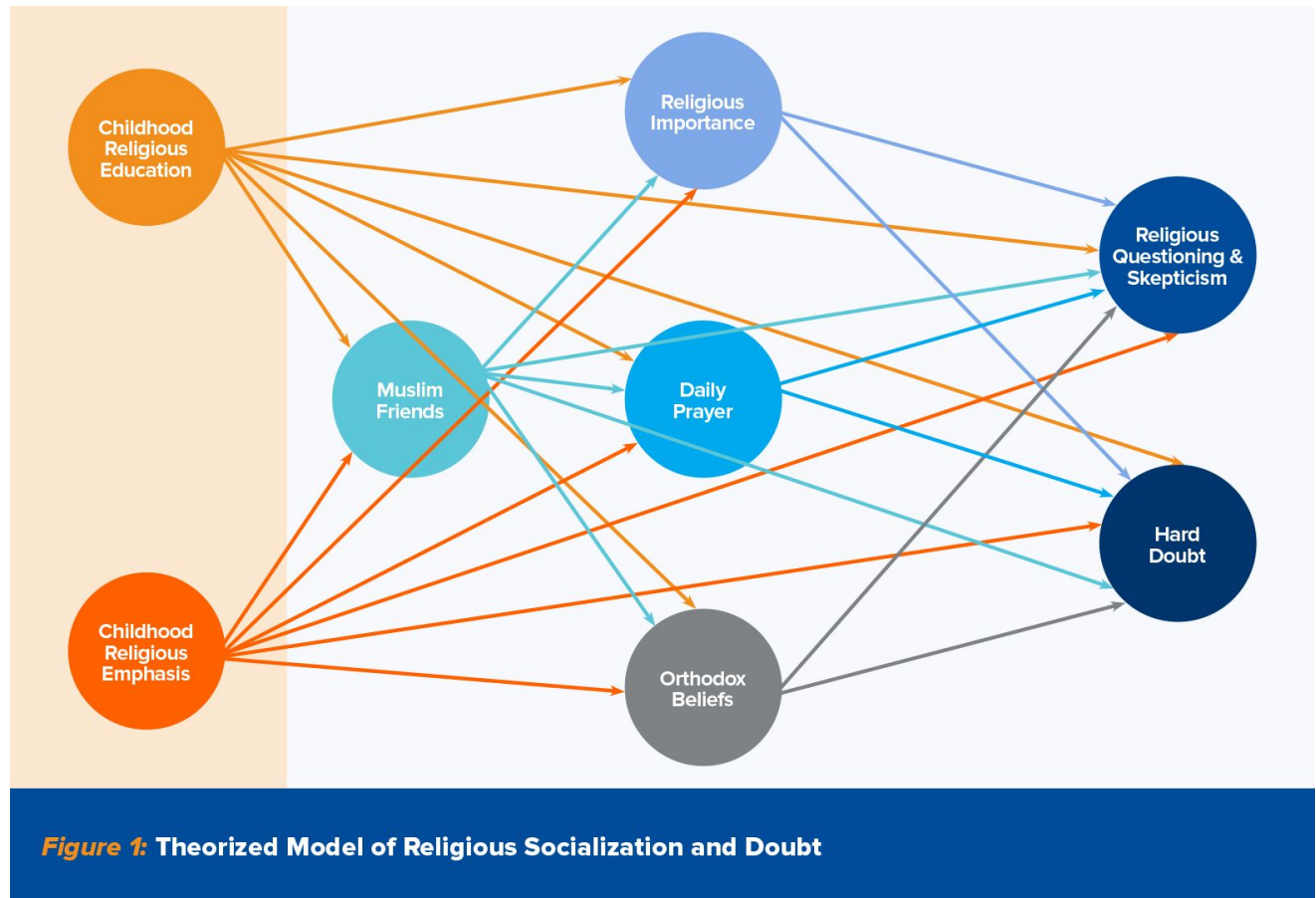
The existing body of research suggests that religious doubt is related to early religious experiences and religiosity. However, it is unknown if the correlates of religious doubt derived from Christian samples apply to Muslims, as there is very little research on the development of religious doubt in Muslim samples. As Muslims in America are living in a predominantly Christian society and are generally not represented in the dominant culture, it is important to identify the development of both religiosity and doubt. Therefore, we build upon prior research on religious doubt among adherents of other faiths, along with the recent research by Chouhoud on Muslims, to study the development of religious doubt in Muslims in America.²⁹ In this study, we investigated the existence of religious doubt and its relation to early religious socialization (retrospectively reported) and religiosity in adulthood. We consider religiosity to include religious beliefs, behaviors, and interactions with members of the same faith.³⁰ The model in Figure 1 represents the hypothesized development of religiosity and doubt. The left-hand side of the model, in yellow, suggests that early childhood experiences predict adult religiosity (i.e., religious importance, Muslim friends, daily prayer, orthodox beliefs), which in turn, predicts both hard doubt and religious questioning and skepticism.

²⁷ Hunsberger, Pratt, and Pancer, "Longitudinal Study of Religious Doubts," 255–66.

²⁸ Paul J. Watson, Ronald J. Morris, Ralph W. Hood Jr., Liv Miller, and Maude G. Waddell, "Religion and the Experiential System: Relationships of Constructive Thinking with Religious Orientation," *The International Journal for the Psychology of Religion* 9, no. 3 (1999): 195–207.

²⁹ Chouhoud, "What Causes Muslims to Doubt Islam?"

³⁰ Loren D. Marks and David C. Dollahite, *Religion and Families: An Introduction* (New York: Routledge, 2016).



In order to investigate these hypothesized correlates of religious doubt, we utilize the data gathered by Chouhoud as part of Yaqeen’s inaugural project. Chouhoud’s quantitative analysis of doubt provided the most in-depth analysis of religious doubt in American Muslims to date.³¹ His study focused on which pathways to doubt were most common for American Muslims, how Muslims with doubts sought answers to their doubts, and investigated the general correlates of religious doubt using linear regression.³² Chouhoud found that neither age nor education predicted experiencing doubt. He also did not find a relation between the frequency of prayer and doubt. Surprisingly, he found that childhood religious emphasis was

³¹ Marks and Dollahite, *Religion and Families*.

³² Linear regression is a statistical technique that permits multiple independent variables to predict an outcome variable (i.e., dependent variable). The technique isolates the unique effect of each independent variable on the outcome variable, while all other independent variables in the model are held at the mean level (i.e., holding all other variables constant).

associated with increased rather than decreased doubt, contrary to prior literature.³³ In this follow-up study, we specifically investigated the direct and indirect predictors of religious doubt as informed by the literature on religious socialization. We investigated whether variables that do not directly predict doubt are related to other variables that do predict doubt. Specifically, we addressed the following questions:

1. To what extent do early childhood experiences of religious socialization (i.e., retrospective self-reports of childhood religious emphasis and religious education) predict adult religiosity (i.e., importance of religion, praying daily, holding orthodox Islamic beliefs, and having Muslim friends)?
2. To what extent does having Muslim friends predict importance of religion, praying daily, and holding orthodox Islamic beliefs?
3. To what extent do early childhood religious experiences (i.e., retrospective self-reports of religious emphasis and religious education) and adult religiosity predict experiencing hard doubts and/or a skeptical disposition towards religion?

Method

Participants

The data in this study come from the Muslim American Attitudes Survey (MAAS). MAAS was a cross-sectional online study of Muslim adults in America collected in 2017 by Yaqeen Institute for Islamic Research. The total sample included 630 Muslims who were randomly sampled and was diverse in many ways, including racial background, income, and education levels. The sample was approximately 28% White, 24% African American, 25% Asian, 12% Middle Eastern/North

³³ Some of the surprising findings may have been the result of statistical artifacts. Upon further investigation of the data, some of the variables were not normally distributed, which violates the statistical assumptions of linear regression and may yield inaccurate results. Additionally, a linear regression analysis pits all predictors against one another to explain the variance in an outcome. Therefore, this method does not allow for understanding how independent variables may be related to one another and temporally cause one another.

African/Arab, and 11% were other minorities. 36% of the sample reported income below \$40,000 annually, 37% reported income between \$50,000 and \$100,000, and 15% reported income over \$100,000. Nearly 24% had a high school degree or less, 59% reported having some college education, and 17% held a college degree. The sample was 40% male and 60% female, ages ranged from 18 to 79 years, and included both converts (26%) and those born into Islam (74%).

Measures

Childhood religious education. Religious education was measured with a single item asking, “What type of religious education did you receive before the age of 18?” Choices included: (1) none; (2) occasional informal lessons; (3) regular formal lessons out of school (e.g., Sunday school); and (4) regular formal lessons in a private religious school.

Childhood religious emphasis. Religious emphasis was measured by a six-item scale.³⁴ Items asked respondents to what degree particular aspects of religion were emphasized by parents, teachers, and close relatives, on a Likert-type scale from 1 (not at all) to 4 (a great deal). As the survey was administered in adulthood, the construct is a measure of perceived childhood religious emphasis. See Appendix A for a complete list of items for each scale. All six items were summed to create a total score of childhood religious emphasis.

Muslim friends. Muslim friends consisted of a single item asking, “About how many of your close friends are the same religion as you?” Choices included: (1) almost none, a few of them (2), about half of them (3), most of them (4), almost all of them (5). This variable was dichotomized (converted to 0 or 1) so that those with almost none were scored as 0 and a few or more (1 to 4) were coded as 1.

Religious importance. Religious importance was measured with a single item asking, “How important is religion in your life?” Choices included not at all important (1), not too important (2), somewhat important (3), very important (4). Due to the variable being heavily skewed (only 12% of the sample considered

³⁴ The internal reliability coefficient (Cronbach’s alpha) was .88 for the six-item religious emphasis scale.

religion as either not too important or somewhat important), the variable was dichotomized so that not at all important, not too important, and somewhat important were coded as 0 and very important was coded as 1.

Daily Prayer. Frequency of prayer was assessed with a single item that asked “In general, how often do you pray *salah* or *namaz* (formal prayer)?” Choices included almost never (1), only on Eid (2), once or twice a month (3), once or twice a week (4), daily (5). This item was dichotomized so that daily prayer was coded as 1 and all other options were 0.

Orthodox Beliefs. Orthodox beliefs were assessed by four items. Items included beliefs about the Qur'an, the literal nature of heaven and hell, salvation, and the afterlife. If respondents believed that the Qur'an is the word of God (i.e., options 1 or 2), heaven was literal, hell was literal, and salvation in the afterlife requires belief in God, these beliefs were coded as 1 for being in line with orthodox beliefs. All other answers were coded as 0 for not conforming to orthodoxy.

Doubt outcome variables

Hard Doubt. Religious doubt was measured by 13 items pertaining to two of the three pathways to doubt (moral and social concerns & philosophical and scientific concerns). The first series of questions asked, “To what extent have the following issues EVER caused you to seriously doubt your religious beliefs?” For all respondents who reported ever having experienced doubt, follow-up questions asked, “And of those issues that have troubled you in the past, how much do they CURRENTLY still cause you to doubt your religious beliefs?” Response options included not at all (1), a little (2), a moderate amount (3), quite a bit (4), a great deal (5). Following our classification of doubt into soft doubt or hard doubt, we dichotomized the responses as 0 or 1. For each of the 13 possible current doubts, responses of not at all or a little were coded as 0 to represent not having a current hard doubt and responses of a moderate amount or above were coded as 1 to represent currently possessing a hard doubt. Therefore, if a respondent had a hard doubt on any of the 13 questions, they were classified as possessing hard doubt.

Religious Questioning. Rather than ask about a specific religious doubt, religious questioning is concerned with a more general skeptical disposition to searching for answers to existential questions.³⁵ A five-item scale³⁶ measured the degree of skepticism and uncertainty with which a person saw themselves as approaching religion and their own conviction. A summary score for religious questioning was created by adding the scores from each of the five items, with higher scores indicating a stronger tendency towards questioning religious beliefs.

Analytic approach

Structural equation modeling (SEM) was employed to analyze the data.³⁷ SEM allows for simultaneously estimating the direct and indirect effects of multiple predictors and outcomes. This method allowed us to see the interdependencies amongst predictors in order to explain the relations between constructs of interest. SEM provides advantages over regression analysis by allowing for simultaneously testing multiple relationships amongst variables. Furthermore, it allows for modeling development over time. Therefore, we can test our model of religious socialization by allowing childhood experiences to temporally precede and predict adult religiosity, which can then predict religious doubt.

Results

Before elaborating on the results of the structural equation model that addressed the main research questions, we provide some descriptive results that provide context about the sample and its beliefs. See Appendix B, Table 1 for descriptive statistics and Table 2 for correlations between variables. The average amount of childhood religious education involved attending Sunday school. As for adult religiosity, 82% of respondents reported having at least some Muslim friends, 60% reported religion being at least somewhat important, 53% reported praying daily,

³⁵ Charles Daniel Batson and W. Larry Ventis, *The Religious Experience: A Social-Psychological Perspective* (New York: Oxford University Press, 1982).

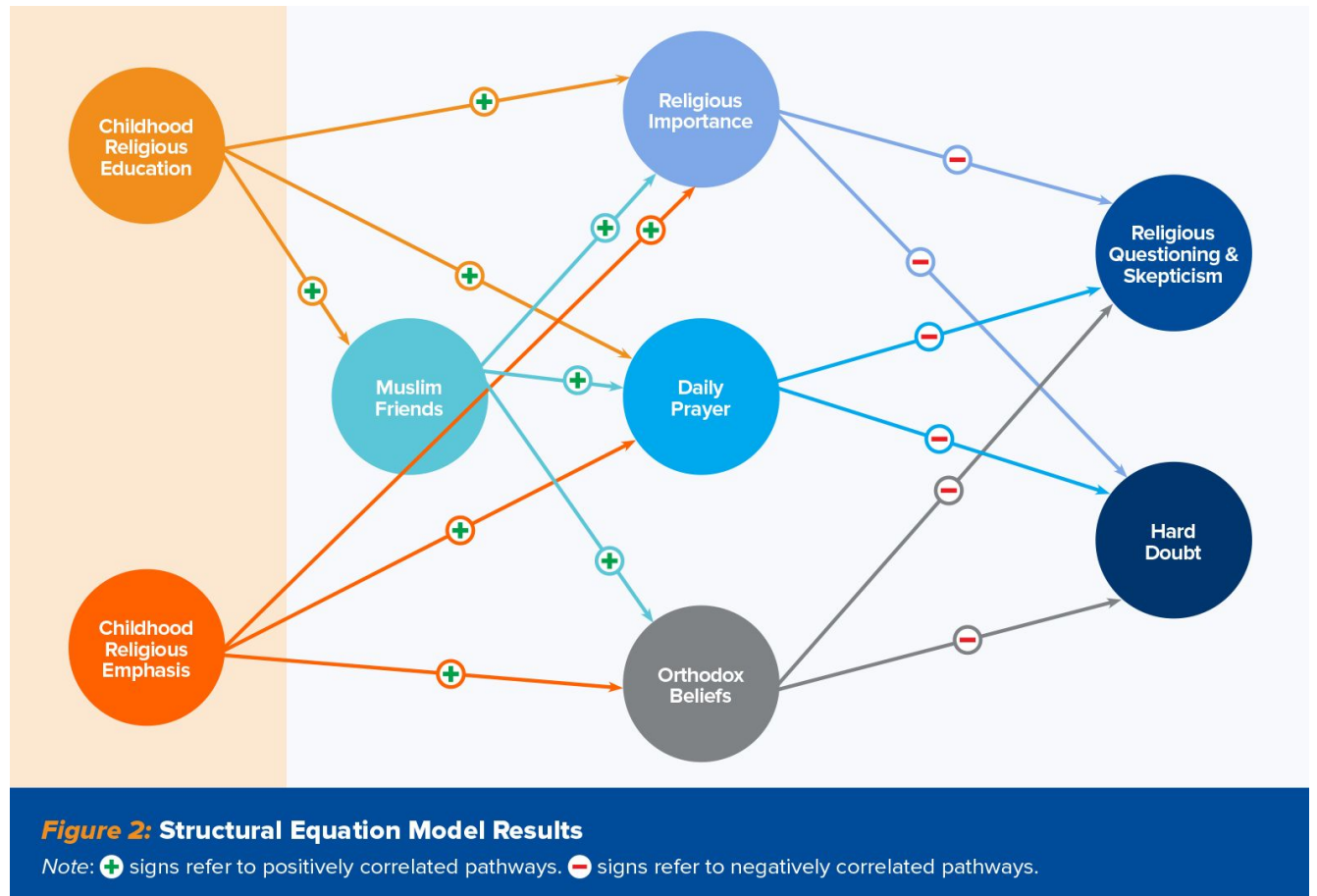
³⁶ The internal reliability coefficient (Cronbach's alpha) was .79 for the five-item quest scale.

³⁷ Stata 15 was used to run the model. The generalized sem (gsem) command was utilized to estimate the parameters for both continuous linear outcomes and binary (logit) outcomes. GSEM in Stata does not provide model fit parameters, so we were unable to test how well the model fit the data.

and 56% reported orthodox beliefs. Of the 630 Muslims in our sample, 55% ($n = 348$) reported experiencing at least one current hard doubt in Islam. The average number of hard doubts amongst those who reported any hard doubt was 3.5. Approximately 9% expressed one or two hard doubts, 24% expressed three to seven hard doubts, and 22% expressed eight or more serious doubts. Whites scored significantly higher on religious questioning ($p = .002$) and total number of hard doubts than non-Whites ($p = .04$). There were no observed differences in frequency of reported hard doubt by gender, income, or education level.

See Figure 2 for the significant results of the structural equation model (and Appendix B, Table 3 for the statistical results of the full model). Our first question pertained to the relations between reported childhood religious education and religious emphasis and adult reports of daily prayer, religious importance, holding orthodox beliefs, and having Muslim friends. It is important to reiterate that since all of the data were gathered on a single survey in adulthood, we have a measure of *perceptions* of childhood religious emphasis, rather than actual childhood religious emphasis, as people reconstruct their memories based on numerous factors that influence their accuracy.³⁸ An increase in reported childhood religious education increased the odds of considering religion important in adulthood by 24%, of having Muslim friends by 27%, and of reporting praying daily by 21%. Childhood religious education was not significantly related to reported holding of orthodox beliefs in adulthood. Perceived childhood religious emphasis increased the odds of considering religion important by 7%, holding orthodox beliefs by 9%, and praying daily by 6%. However, perceived childhood religious emphasis was not related to the likelihood of having Muslim friends in adulthood.

³⁸ Elizabeth F. Loftus and Jacqueline E. Pickrell, "The Formation of False Memories," *Psychiatric Annals* 25, no. 12 (1995): 720–25.



Our second research question investigated the relation between having Muslims friends and religious importance, daily prayer, and holding orthodox beliefs. Having Muslim friends increased the odds of considering religion important by 148% (i.e., a factor of 2.48; people with Muslim friends were approximately two and a half times more likely to consider religion important than people without Muslim friends), praying daily by 280% (i.e., a factor of 3.8), and holding orthodox beliefs by 186% (i.e., a factor of 2.86).

Our third research question was concerned with the predictors of hard doubt and religious questioning. Daily prayer, holding orthodox beliefs, and considering religion important were all associated with reduced religious questioning and skepticism and decreased the likelihood of reporting any hard doubts. Praying daily

reduced the odds of reporting any hard doubts by 33% ($OR = .67, p < .05$),³⁹ holding orthodox beliefs reduced the odds of having hard doubts by 34%, and considering religion important reduced the odds of having hard doubts by 51%. Similarly, praying daily ($B = -.1, p < .05$), holding orthodox beliefs ($B = -.22, p < .05$), and considering religion important ($B = -.12, p < .05$) were all associated with reduced religious questioning and skepticism.⁴⁰ Religious education and perceived childhood religious emphasis did not directly predict having hard doubts or religious questioning and skepticism. However, both indirectly influenced hard doubt and religious questioning through their positive associations with religious importance, daily prayer, and holding orthodox beliefs. Similarly, having Muslim friends did not directly relate to doubts and religious questioning. However, having Muslim friends indirectly decreased the likelihood of having hard doubt and religious skepticism through its positive association with religious importance, praying daily, and holding orthodox beliefs. In turn, as previously mentioned, all three of these factors (e.g., daily prayer, holding orthodox beliefs, and religious importance) decreased the likelihood of reporting any hard doubt and the extent of religious questioning and skepticism.

These results highlight that religious attitudes, beliefs, and practices are related to religious doubts. Religious importance, orthodox beliefs, and daily prayer are all associated with reducing the likelihood of having doubts and religious questioning and skepticism. Additionally, childhood religious education, perceived childhood religious emphasis, and having Muslims friends indirectly decrease religious doubt and questioning through increasing the likelihood of holding orthodox beliefs, daily prayer, and religious importance. Therefore, these factors appear to mediate the relationship between early childhood religious experiences and religious doubt. However, we caution against inferring a causal relationship, as perhaps holding religious doubts decreases religious importance, orthodox beliefs, and frequency of

³⁹ *OR* stands for odds ratio. Odds ratios express the likelihood, odds, or chance of being in one of two categories under different conditions. Odds ratios greater than 1 indicate increased odds, whereas odds ratios less than 1 indicate decreased odds of an outcome.

⁴⁰ *B* refers to the standardized value. All standardized values have been calculated from the unstandardized SEM results. To illustrate their meaning, we can use the association between praying daily and religious questioning as an example. Praying daily is associated with one-tenth of a standard deviation decrease in religious questioning and skepticism.

prayer. Nonetheless, it seems apparent that early religious experiences and perceptions of experiences predict future religiosity, which is related to subsequent hard doubt and religious questioning.

Discussion

This study investigated the correlates of religious doubt and religious skepticism. More than half of our sample (55%) reported experiencing at least one hard religious doubt, suggesting that religious doubt in Muslim Americans is common and needs to be better understood. One of the key findings is the importance of childhood religious experiences in predicting adult religiosity, which is subsequently correlated with lower levels of religious doubt. People who report having received more religious education and having religion emphasized in their childhood are more likely to pray daily, hold orthodox beliefs, and consider religion important in their lives. These factors all reduce the likelihood of having any hard doubt and generally being skeptical of religion.

These findings support the channeling theory of religious socialization, which states that parents influence their children's religiosity by channeling them into experiences and environments that support desirable religious values. Our results, in this sample of Muslims in America, are similar to the findings of Himmelfarb, who studied the religious socialization of Jews in Chicago. Himmelfarb found that parental religiosity indirectly influenced their children's religiosity through other agents of religious socialization that parents encouraged, such as religious education and religious peers.⁴¹ Although we do not have data on parental religiosity itself, perceived childhood religious emphasis functions as a reasonable proxy of the religious values of parents and other influential adult socializers. Furthermore, the indirect effect of perceived childhood religious emphasis reducing religious doubts and religious questioning differs substantially from the previous findings of Chouhoud's study of doubt.⁴² Chouhoud found that perceived childhood religious emphasis actually predicted increased religious doubt, whereas

⁴¹ Harold S. Himmelfarb, "Agents of Religious Socialization among American Jews," *Sociological Quarterly* 20, no. 4 (1979): 447–94.

⁴² Chouhoud, "What Causes Muslims to Doubt Islam?"

we found that it indirectly decreased religious doubt. He stated, “... growing up in an environment where religion was emphasized, rather than staving off doubt, seems to enhance it. In the full model (see [Appendix C](#)), this positive association crosses into statistical significance.”⁴³ We respectfully believe that Chouhoud’s finding may have been a statistical artifact and a false positive.⁴⁴ Furthermore, the divergent findings between the two studies may have been caused by analyzing slightly different outcomes. In the current study, we investigated the relation between perceived childhood religious emphasis and whether the individual was currently experiencing any hard doubt. Chouhoud analyzed the relation between perceived childhood religious emphasis and the total doubt ever experienced, both previously and currently. Ultimately, the current finding is more theoretically aligned with prior research, giving us more confidence in the results. This is an important distinction as parents should not believe that emphasizing religion in their children’s lives may increase their children’s doubt. However, as Chouhoud speculated, people who perceive their religious upbringing as overly strict and harsh may harbor doubts. We should be careful in future research to differentiate between harsh and coercive religious parenting (i.e., authoritarian) and warm and compassionate parenting (e.g., authoritative), as they likely lead to different outcomes.

Childhood religious education predicted the likelihood of having Muslim friends in adulthood, and having Muslim friends was an important predictor of religiosity as measured by daily prayer, orthodox beliefs, and religious importance. Thus, having Muslim friends indirectly reduced the likelihood of having doubts. The effect of Muslim friends could operate in multiple ways and we cannot make any strong claims based on our data. It could be that having Muslim friends reduces doubt in and of itself, or it could be that having Muslim friends provides a support system

⁴³ Chouhoud, “What Causes Muslims to Doubt Islam?”

⁴⁴ There are a few reasons we doubt the accuracy of Chouhoud’s finding that perceived religious emphasis was related to increased doubt. First, the relation between perceived childhood religious emphasis and doubt was inconsistent in his study between the multiple models in his analysis. For example, in Figure 6 of his paper, religious emphasis is not statistically significant in its relation with doubt, although its magnitude is slightly negative. Then, in the complete model in Appendix C, which includes many more predictors, the relation between religious emphasis and doubt both increases in magnitude and becomes statistically significant. As the relation between religious emphasis and doubt was not robust in his analysis, in addition to being opposed to prior research and our expectations, we conclude that his finding was a false positive, possibly due to a suppressor effect.

for people to discuss their doubts with and have them resolved before they become hard doubts. **Nonetheless, this finding was interesting because our measure was not a measure of how religious their friends were, but only whether respondents' friends were Muslim or not. This suggests that simply having same-faith friends provides a level of religious support, independent of their actual religiosity.** We suspect, based on prior literature, that having religious friends would have an additive effect on religiosity. This notion is supported by both the Qur'an and the advice of Prophet Muhammad ﷺ, who said, “A person will be upon the religion of his best friend(s), so let one of you look closely at whom he befriends.”⁴⁵

Another important point of discussion is the relationship between religiosity and religious doubts. Although our model suggests that certain aspects of religiosity, such as daily prayer, orthodox beliefs, and religious importance, predict the absence of hard doubt and reduce religious questioning, no causal conclusion can be made as to whether religiosity causes less doubt or whether less doubt causes more religiosity. We suspect a bidirectional influence, where religiosity influences doubt and doubt influences religiosity. The relationship between religiosity and doubt may also be dependent on coping mechanisms (i.e., how people cope with doubt). Exposure to resources that are anti-Islamic (whether by accident or by choice, such as querying search engines, YouTube, or online forums and finding anti-Islamic results) will likely diminish one's religiosity,⁴⁶ whereas seeking out pro-Islamic resources may help resolve the doubt and increase or maintain religiosity. Future longitudinal research should be done to further investigate the causal relations between doubt and religiosity and how they vary as a function of the sources one consults to deal with these doubts. Another limitation of this study was its reliance on retrospective memories of childhood religious socialization. Substantial research has found that our memories can be disrupted by future life experiences (i.e., retroactive interference). Therefore, a person's current religiosity and doubt likely influence how they perceive their childhood. Future prospective studies should consider asking parents about how they emphasize religion in their

⁴⁵ *Sunan al-Tirmidhī: kitab al-zuhd*, hadith 2378.

⁴⁶ Hunsberger, Pratt, and Pancer, “Longitudinal Study of Religious Doubts,” 255–66.

children's lives, asking children and adolescents about their perceptions of religious emphasis, and measure subsequent religiosity and doubt. In addition, future studies should investigate the relations among mental health, religiosity, and religious doubt, as they are likely related. These types of studies will help uncover the causes of doubt, which are important to establish before designing interventions.

This empirical study of religious socialization, religiosity, and religious doubt builds upon the now growing literature on Muslims in the West. Our findings add value in highlighting the important relations between childhood religious socialization and adult religiosity and doubt. The results provide evidence that social influences at a young age may lead to certain behaviors and beliefs in adulthood that predict religious doubt. Faith is the most valuable thing in the life of a Muslim, and more studies on religiosity and doubt are necessary to aid in preserving the *imaan* of Muslims. Through continuing to research these topics, we hope to inform parents and other agents of religious socialization about the pathways to religious conviction, so they may nurture them, and the pathways to hard doubt, so they may help people avoid experiencing it.

Appendix A

List of survey questions used

Religious Education

Which of the following forms of religious education did you receive BEFORE turning 18 years old?

- I did not have any religious education prior to turning 18 years old (1)
- Occasional informal lessons (e.g., Bible/Torah/Qur'an study) (2)
- Regular formal lessons outside of normal school hours (e.g., "Sunday school") (3)
- Regular formal lessons as a student in a private religious school (4)

Religious Emphasis

Thinking back on your youth, to what extent did the important people in your life--such as teachers, parents, or other close relatives--do the following: (1 – not at all, 4 – a great deal)

- Emphasize attending religious services
- Encourage you to read scripture and other religious material
- Teach you to fear God's punishment if you sin
- Discuss moral "dos" and "don'ts" in religious terms
- Observe religious holidays
- Teach you that your religion's rules are not to be questioned

Religious Importance

How important is religion in your life?

- Not at all important (1)
- Not too important (2)
- Somewhat important (3)
- Very important (4)

Frequency of Prayer

In general, how often do you pray *salah* or *namaz* (formal prayer)?

- Almost never (1)
- Only during Eid (2)
- Once or twice a month (3)
- Once or twice a week (4)
- Daily (5)

Orthodox Beliefs

Which of the following statements comes closest to your personal beliefs about the Qur'an?

- The Qur'an is the actual word of God and should be taken literally, word for word (1)
- The Qur'an is the actual word of God but has some content that is merely symbolic (2)
- The Qur'an is an ancient book of history and moral guidance authored by men (3)

Do you believe there is a literal Hell?

- No (0)
- Yes (1)
- Not sure (99)

Do you believe there is a literal Heaven?

- No (0)
- Yes (1)
- Not sure (99)

Which of the following statements comes closest to your personal beliefs about the Afterlife:

- My religion offers the only true path to Heaven (1)
- My religion is the truest path to salvation, but those who have not received its message (or received a distorted version of it) may also enter Heaven (2)
- Those of any faith who believe in God can enter Heaven, but not those who don't believe in God or who believe in something other than one Supreme Being (3)
- Followers of any religion, or even those who do not believe in God, are all equally eligible to enter Heaven (4)

Religious Doubt

And of those issues that have troubled you in the past, how much do they **CURRENTLY** still cause you to doubt your religious beliefs? (1 – not at all, 3 – a moderate amount, 5 – a great deal)

- Uncertainty over the existence of God
- The problem of evil and unfair suffering in the world
- The bad things that people do in the name of religion
- The debate over Evolution (through natural selection) vs. Creation (through God)
- The way that religious people sometimes insist that there is only one "right" way to practice faith
- The hypocrisy of religious people; that is, the nonreligious behavior of supposedly religious individuals
- The death of a loved one
- The intolerance that some religious people show toward other faiths
- Teachings about the role of women
- Finding that being religious does not make one happy
- The intolerance that some religious people show toward certain other people (for example, homosexuals)

- Not feeling welcomed in your faith community
- Feeling that certain religious beliefs or practices do not make sense

Religious Quest

Please indicate whether you AGREE or DISAGREE with the following statements:

(1 – strongly disagree, 5 – strongly agree)

- My life experiences have led me to rethink my religious convictions
- For me, doubting is an important part of what it means to be religious
- I find religious doubts upsetting
- Questions are far more central to my religious experience than are answers
- As I grow and change, I expect my religious beliefs will similarly shift
- I do NOT expect my religious convictions to change in the next few years
- There are many religious issues on which my views are still changing

Appendix B

Table 1 - Descriptive Statistics for All Variables

	Mean/ Proportion	Standard Deviation	Minimum	Maximum
Religious Education	2.44	1.02	1	4
Religious Emphasis	17.30	4.86	6	24
Muslim Friends	82%	0.39	0	1
Religious Importance	60%	0.49	0	1
Daily Prayer	53%	0.50	0	1
Orthodox Beliefs	56%	0.50	0	1
Religious Questioning	14.64	4.77	5	25
Hard Doubt	55%	0.50	0	1
Total Hard Doubts	3.46	3.88	0	11
<i>N</i>	630			

Table 2 - Correlation Table for all Study Variables

	Relig Educ	Relig Emph	Muslim Friends	Relig Import	Daily Prayer	Orthodox Beliefs	Relig Quest	Hard Doubt
Relig Educ	1.00							
Relig Emph	0.34***	1.00						
Friends	0.11**	0.10*	1.00					
Relig Import	0.17***	0.21***	0.19***	1.00				
Prayer	0.16***	0.19***	0.25***	0.55***	1.00			
Orthodox	0.12**	0.23***	0.21***	0.35***	0.25***	1.00		
Relig Quest	-0.04	-0.12**	-0.14***	-0.26***	-0.23***	-0.30***	1.00	
Hard Doubt	-0.03	-0.03	-0.08*	-0.24***	-0.20***	-0.17***	0.33***	1.00

Note: * p<.05, ** p<.01, *** p<.001

Table 3 - Full Output of SEM Model

		Log Odds/ beta	Odds Ratio	Standard Error	<i>z</i> value	<i>p</i> value
Religious Questioning						
	Prayer	-0.95	-	0.44	-2.17	0.03
	Rel Education	0.17	-	0.19	0.90	0.37
	Rel Emphasis	-0.03	-	0.04	-0.87	0.38
	Orthodox	-2.09	-	0.39	-5.34	0.00
	Religious Import	-1.17	-	0.45	-2.58	0.01
	Friends	-0.57	-	0.48	-1.17	0.24
	Intercept	17.68		0.76	23.38	0.00
Hard Doubt						
	Prayer	-0.41	0.67	0.20	-2.01	0.04
	Rel Education	0.03	1.03	0.09	0.35	0.73
	Rel Emphasis	0.02	1.02	0.02	1.03	0.30
	Orthodox	-0.42	0.66	0.18	-2.29	0.02
	Religious Import	-0.71	0.49	0.21	-3.38	0.00
	Friends	-0.04	0.96	0.23	-0.17	0.87
	Intercept	0.74		0.36	2.05	0.04
Daily Prayer						
	Rel Education	0.19	1.21	0.09	2.16	0.03
	Rel Emphasis	0.06	1.06	0.02	3.37	0.00
	Friends	1.33	3.80	0.23	5.68	0.00
	Intercept	-2.53		0.39	-6.48	0.00
Orthodox						
	Rel Education	0.06	1.06	0.09	0.66	0.51
	Rel Emphasis	0.09	1.09	0.02	4.80	0.00
	Friends	1.05	2.86	0.22	4.71	0.00
	Intercept	-2.31		0.38	-6.09	0.00
Relig Import						
	Rel Education	0.21	1.24	0.09	2.38	0.02
	Rel Emphasis	0.07	1.07	0.02	3.77	0.00
	Friends	0.91	2.48	0.22	4.18	0.00
	Intercept	-2.03		0.37	-5.48	0.00
Friends						
	Rel Education	0.24	1.27	0.11	2.15	0.03
	Rel Emphasis	0.03	1.03	0.02	1.52	0.13

Intercept	0.37	0.38	0.98	0.33
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Note: Bolded odds ratio coefficients are statistically significant (p < .05)

Appendix C

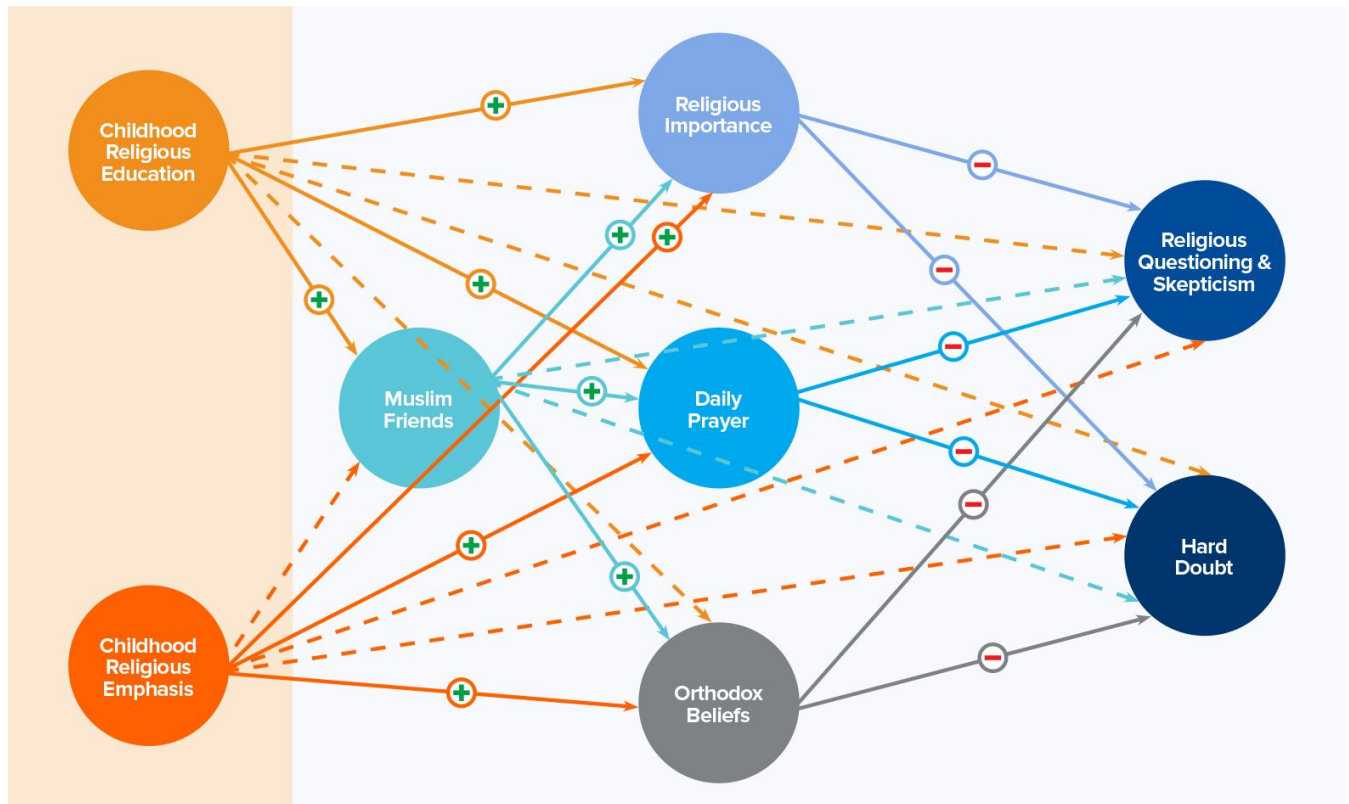


Figure A

Note: This figure visually depicts the results of the final model. + signs refer to positively correlated pathways. - signs refer to negatively correlated pathways. Dashed lines refer to statistically insignificant pathways ($p > .05$)