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RESEARCH PAPER

Gender and religion: a survey

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Abstract
This paper surveys the literature on gender differences in religiosity and on how religion shapes gender-related economic and social outcomes. Part I examines why women tend to be more religious than men, reviewing leading explanations from sociology, economics, and psychology. Part II analyzes how religion affects gender norms and attitudes, education, labor market participation, fertility, health, legal institutions, and discrimination. Across domains, we distinguish between effects driven by individual religiosity—such as beliefs and religious practice—and those driven by religious denomination. We emphasize studies that employ credible causal identification strategies, including natural experiments, instrumental variables, and policy reforms, while also reviewing correlational evidence for context. Overall, the literature suggests that religious teachings and participation often reinforce traditional gender roles, influencing women's education, labor supply, and fertility decisions, though important heterogeneity and exceptions exist. We also highlight instances in which secular reforms or religious movements have altered these outcomes. The survey concludes by identifying gaps in the literature and outlining priorities for future empirical research.

Keywords: Gender gaps; Religion; Religiosity; Gender norms; Socioeconomic outcomes

JEL classification: Z12; J16; J24; I21; J13; Z13

1. Introduction

Gender and religion are linked in various ways. One striking empirical regularity is a gender gap in religiosity: in many societies, women report higher levels of religious belief and participation than men. This gap manifests in various dimensions – women often have higher self-reported religiosity and pray more frequently than men, though patterns can vary by religious denomination and context (Pew Research Center 2016). Another regularity is that religion influences behaviors and outcomes, among them gender-related behaviors and outcomes. Religious teachings may directly prescribe

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different roles for men and women, affecting gender inequality in economic and social life. Conversely, if religion shapes behaviors and outcomes in domains like education and labor markets, gender gaps in religiosity could translate into gendered differences in those outcomes.

Understanding why women are more religious than men, and what religion implies for gender-differentiated outcomes, is important for economists and social scientists. Indeed, Norris and Inglehart (2004) argue that one of the key dimensions distinguishing secular-modern values from traditional religious values is attitudes toward gender and sexuality. Their global analysis concludes that the "great divide" between secular and religious cultures in the modern world is most evident in issues of gender equality and sexual liberation – more so than in attitudes toward democracy or work. This underscores the importance of the topic.

This paper provides an academic survey of the literature on gender and religion.[1] We organize the discussion in two main parts. Part I addresses the question: why are women more religious than men in many societies? We review theoretical explanations and empirical evidence. These explanations range from classic economic theories of household time allocation (Azzi and Ehrenberg 1975) to sociological perspectives on risk-aversion and social roles (De Vaus and McAllister 1987; Miller and Hoffmann 1995) to more recent arguments about socialization and identity. We note recent trends and exceptions, such as evidence that the gender gap in religious participation may be narrowing among younger cohorts in some countries (e.g., the United States). Part II then examines the impact of religion on a range of outcomes related to gender equality and women's welfare. We divide this part into sections covering gender norms and attitudes, education and human capital, labor market outcomes, fertility and health, legal institutions and reforms, and discrimination.

We distinguish between studies that use religiosity measures (such as frequency of prayer or attendance, or intensity of belief) and those that use religious denomination or affiliation (such as Christian vs Muslim, Catholic vs. Protestant, Sunni vs. Alevi Muslim, etc.) as key explanatory factors. One detail worth noting is that we define differences between having a religious denomination and not having one as a measure of religiosity. Not as a measure of religious denominational differences.

Our focus is on empirical studies, although we supplement with some theoretical studies. Where possible, we highlight studies that offer causal identification of religion's impact – leveraging natural experiments, instrumental variables, policy changes, or randomized interventions – since isolating the effect of religion is notoriously difficult due to endogeneity of religious affiliation and commitment (Iyer 2016). Correlational studies, while less conclusive, are also reviewed to provide a fuller picture of the associations between religion and gender-related outcomes. We also point out contradictory findings and context-specific nuances – for instance, the ways Protestantism historically promoted female education in some settings (Becker and Woessmann 2008) versus how Islam's influence on female labor supply might differ by cultural context and interpretation (Akyol and Ökten 2024).

[1]Previous surveys on the economics of religion (Basedau *et al.*, 2018; Becker *et al.*, 2021, 2024; Becker *et al.*, 2025; Iyer, 2016) touch on gender aspects, but do not focus on the nexus between religion and gender. The survey by Gundersen and Beck (2023) is short (16 pages), US-focused, mostly presents contemporary work, and covers little on non-US or historic settings. The journal "Religion and Gender" started in 2011, publishes 10 papers a year with mostly qualitative work.

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2. Why are women more religious than men?

Although religious leadership has historically been dominated by men, extensive survey evidence and demographic data indicate that women tend to be more religious than men across societies, faith traditions, and historical periods (Beit-Hallahmi 2014; Inglehart & Norris 2003; Pew Research Center 2016; Schnabel 2016; Stark 2002; Trzebiatowska and Bruce 2012; Vardy *et al.* 2022). The magnitude and direction of the gap varies depending on the dimension of religiosity examined. Where a gap is observed, women are generally more likely than men to report a religious affiliation, to engage in daily prayer, and to consider religion an important part of their lives. However, patterns of participation differ across religious contexts: while women attend worship services more frequently than men in predominantly Christian societies, the reverse tends to hold in Muslim and Jewish contexts (Pew Research Center 2016; Sullins 2006). We return to these heterogeneities in Section 2.2 (*Heterogeneity in the religiosity gender gap*).

Several hypotheses have been proposed to explain the gender gap in religiosity. We review five prominent explanations: (1) economic time allocation and the household division of labor, (2) risk preferences and insurance motives, (3) secular competition for time (opportunity cost arguments), (4) gender role socialization and identity, and (5) deprivation and compensation.

We discuss the empirical support for each theory, noting that no single explanation fully accounts for the patterns observed. We also note that the gender gap itself may be context-dependent and changing over time. Interestingly, recent anecdotal evidence in the United States suggests that the religious attendance gap has narrowed among the young generation, a phenomenon to which we return in Section 2.2 (*Heterogeneity in the religiosity gender gap*) (Graham, 2024).

2.1. Explanations for the religiosity gender gap

Time Allocation and the Household Division of Labor. One of the earliest economic theories of religious participation is the Azzi-Ehrenberg (1975) model, which treats religious activity as a use of time that yields utility in both the afterlife and present (through community or psychological benefits). In a household context, if one spouse specializes in home production and has a lower opportunity cost of time in the labor market, that spouse might devote more time to religious activities. Traditionally, women (particularly married women) have borne a larger share of home production and childcare, making their time cost of religious participation lower than men's. Azzi and Ehrenberg explicitly hypothesize that this dynamic could explain why women attend church more often than men – essentially, religious participation was modeled as a "household-produced" good, and wives had a comparative advantage in producing it. This model predicts a gender gap in religiosity rooted in economic roles. Iannaccone (1990) expanded the notion by viewing religious practice as a form of human capital investment and habit formation, again noting that individuals with more available time (often women, in traditional households) can invest more in religious activities. While time allocation alone certainly does not fully explain the gender gap, it likely contributes in settings where women's labor force participation is low.

There is some empirical (correlational) support for the role of time-use and household division of labor as explanations for the gender religiosity gap. A global analysis by Pew Research Center (2016) finds that women who work outside the home tend to exhibit lower religiosity than those who do not, and consequently the gender gap

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in prayer and importance of religion is smaller in societies with higher female labor force participation. In the same vein, a Canadian study shows that the gender gap in attendance has been shrinking, but more so for employed Canadians (Dilmaghani 2019). Similarly, in the United States, high-earning women are less active in religion than low-earning women, while the opposite is true for men – as a potential result of this, there is no gender difference in religiosity among top earners (Schnabel 2016). Also, some secularizing, economically developed countries have seen signs of convergence between men's and women's religiosity over time. However, time allocation alone may not fully explain the gender gap – even in very gender-equal, secular societies, women on average still report higher religiosity in many measures (Voas *et al.* 2013).

Risk Preferences and Insurance Motives. One hypothesis posits that gender differences in risk-aversion contribute to the religiosity gap (Miller and Hoffmann 1995; Miller and Stark 2002). Research in psychology and economics has found that women are more risk-averse than men on average (Byrnes *et al.* 1999). Miller and Hoffmann (1995) argued that being non-religious can be seen as a "risk" in the context of Pascal's wager – if one is less religious and the promises or threats of religion (heaven, hell) turn out to be true, the non-religious individual is taking an eternal risk. More religious people, in this view, are "buying insurance" against existential uncertainty. If women are more risk-averse, they may be more inclined to be religious to avoid gambling on the afterlife.

Religion may also provide insurance in a more immediate sense: religious communities offer material aid, emotional support, and mutual assistance in times of need (Pargament 2001). This safety net aspect of religion could appeal to risk-averse individuals and those vulnerable to shocks (Norris and Inglehart 2004; Pargament 2001). Empirical support for the risk-aversion hypothesis includes the finding that religiosity of individuals (of either sex) tends to rise after natural disasters, presumably due to the emotional comfort of religion (Bentzen 2019). If women on average perceive greater vulnerability or are more risk-averse, they might lean more on religion. Stark (2002) also connects risk-taking propensities to religiosity, drawing a parallel with crime: men commit more crimes and are less churchgoing, possibly due to a higher tolerance for risk and willingness to flout rules ("real men take what they want, only wimps fear divine punishment," as Stark paraphrases). Irreligion might be seen by some as a dare or recklessness that women are less inclined to indulge in.

While risk preference differences likely play a role, they cannot be the sole explanation. For example, Roth and Kroll (2007) hypothesize that if religion as an insurance against afterlife risk explains the religiosity gender gap, then the gap should be larger for those who believe in an afterlife. However, using data from the General Social Survey in the U.S. (GSS) and the global World Values Survey (WVS), they find the opposite; the religiosity gender gap is larger among those who do *not* believe in an afterlife (or hell), relative to those who do. More recently, Li *et al.* (2020) tests the theory with multiple measures – including psychological and even genetic indicators of risk tolerance – and finds that gender differences in risk-taking do not fully account for the gender gap in religiosity. In their study, most of the female–male gap remains unexplained after controlling for risk preferences, leading the authors to suggest that risk-aversion is at best a partial contributor. Moreover, risk attitudes themselves may be shaped by socialization, which brings us to the next explanation.

Gender-Role Socialization and Identity. From a young age, women and men may be socialized into different roles and attitudes, including toward religion. Women in many societies have traditionally been expected to uphold virtue, chastity, and piety –

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traits closely aligned with religious adherence. Being religious may be seen as part of the ideal feminine persona, signaling fidelity and moral commitment (for instance, in marriage markets). Thus, women might face greater social pressure or incentive to be religious, even independently of their own innate preferences. Men, conversely, might face pressure to not appear too pious in certain cultures, since vigorous religious devotion (beyond basic observance) might conflict with machismo ideals (Stark 2002 notes that men sometimes ridicule churchgoing as unmanly). Trzebiatowska and Bruce (2012) argue that historically, women's lives were more centered on home, family, and community – spheres where religious institutions loom large – whereas men's identities were tied to work and public life where secular rationality might be valued. Additionally, some religious teachings explicitly tie women's virtue to religiosity; for instance, in conservative Christian and Muslim contexts, an openly non-religious woman might be stigmatized as less chaste or family-oriented, whereas an irreligious man might be judged less harshly. Over time, these social forces could produce higher average religiosity among women. Related, Stark (1996) argues that early Christianity was more appealing to women than to men, as Christianity gave women better opportunities relative to pagan society.

Empirically, this role for socialization is hard to isolate, but the gap has been found to narrow in modern contexts. For instance, Voas *et al.* (2013) conduct a cross-national comparison using data from multiple European surveys (ESS, EVS, ISSP). Their correlational models show that gender gaps narrow with measures of modernization, secularization, and levels of gender equality. But the gap does not vanish entirely – even in highly secular countries women remain more religious than men. Potential socialization effects are also evident in how religiosity changes with marital status: studies often find that married women are more religious than single women, possibly because marriage and motherhood elevate the social expectation of religious involvement (being a "good mother" may be viewed as aligning with raising children religiously) (Call and Heaton 1997; Stolzenberg *et al.* 1995).

Deprivation and Compensation. A classic sociological and psychological idea is that religion can function as a source of comfort and social support, especially for those who experience deprivation or stress (Pargament 2001). Historically, women may have faced certain deprivations that made religion particularly appealing to them as a coping mechanism. For instance, women, especially housewives in traditional societies, might have experienced isolation, lack of autonomy, or frustration from being excluded from the "socially valued" role of breadwinner. Religion and church communities could compensate by providing an alternative sphere of value, sisterhood, and purpose. Moberg's (1962) study of the church as a social institution suggests that churches often offered women leadership and social networking opportunities (through women's church groups, charity work, etc.) that they lacked elsewhere. Under the "deprivation-compensation" theory, women who are disadvantaged or confined by societal structures might turn to religion for fulfillment and status. This theory is somewhat complementary to the others: it implies that if society changes such that women are less deprived or isolated (more integrated into public life and careers), the compensatory need for religion could diminish. The deprivation-compensation hypothesis is difficult to test directly, but qualitative accounts and historical trends lend it some plausibility. The shrinking religiosity gender gap as gender equality improves is also consistent with deprivation-compensation. Several studies show that single mothers, for example, often rely on church networks for support (e.g. Edgell 2006; Stolzenberg *et al.* 1995).

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Physiological and Life-Cycle Factors. Another potential explanation for the religiosity gender gap relates to gender differences in physiology (Stark, 2002). In view of the religious coping hypothesis mentioned above, childbirth might be an experience that strengthens religious attachment. Maslow (1954) hypothesizes that women's physiological milestones – from menstruation to childbirth – evoke feelings of awe and mystery that can spur spiritual engagement. Callister and Khalaf (2010) develop this hypothesis by analyzing birth stories of women from diverse cultures. Giving birth might increase spiritual reflection, or mothers might gravitate to religion as they raise children and consider moral education. For instance, narrative birth reports by Mexican immigrant mothers in the US reveal that prayer and strong family/church support helped these women cope with labor and contributed to positive perinatal experiences, illustrating how motherhood can reinforce religious commitment (Callister & Birkhead 2008).

There is also a life-cycle pattern: women, on average, live longer and outlive spouses, and older individuals tend to be more religious; thus a greater proportion of elderly churchgoers are female. This can statistically widen the gap in surveys of church attendance. However, these factors cannot explain why young women are also more religious than young men, for example.

Secular Competition and Opportunity Cost. Another hypothesis of our own is that if men disproportionately engage in secular options for community and leisure, such as sports, this could explain the religiosity gender gap. For instance, if young boys (and their fathers) are more likely to play soccer on Sundays than young girls (and their mothers), this could crowd out time spent in church. The idea is similar in spirit to Gruber and Hungerman (2008)'s study, which documents how Sunday shopping opportunities (via repeal of so-called "blue laws") affected church attendance. Borrowing from their terminology, this notion of "the church versus the soccer league" suggests that gender-biased scheduling could widen the religiosity gender gap.

2.2. Heterogeneity in the religiosity gender gap

Is the Religious Gender Gap Closing? The longstanding finding that women are more religious than men is undergoing a partial reversal among younger cohorts in Europe, North America, and Australia (Graham, 2024; Medhora, 2024). Recent surveys indicate that young men in some contexts are now as religious as, or even more religious than, young women. The reversal among the young may be due to women leaving religion or men increasingly embracing it. According to a 2023 survey of 5,459 American adults conducted by the Survey Center of American Life (AEI), women outnumber men among the young adults leaving religion (54% women vs 46% men among Generation Z).

Several explanations have been advanced. One line of argument emphasizes backlash and identity politics. Men who feel socially or economically deprived may seek religion as a compensatory mechanism, while others may embrace religious nationalism as a means of asserting masculinity. Walker and Djupe (2025) show that men who describe themselves in more "feminine" terms are paradoxically more drawn to extreme Christian nationalism, suggesting that religion can serve as a performative tool to reclaim threatened masculine identity. Wilcox (2006) similarly argues that evangelical Christianity appeals to men by providing family-centered norms that domesticate male behavior, enhancing marital and paternal roles. Some contemporary religious movements have deliberately recast faith in hyper-masculine terms to attract men. McKinney (2023) documents how Pastor Mark Driscoll's Mars Hill Church in Seattle grew rapidly by "making Christianity manly again." Through content analysis of

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Driscoll's sermons and church practices, she shows that the church promoted a militant, patriarchal vision of Christian manhood to appeal to young men and reinforce male authority in both church and family life. On the other hand, young women have increasingly detached from organized religion, perceiving churches as patriarchal or hostile to feminist values (Cox & Hammond 2024). The MeToo movement and broader social liberalization may have accelerated this secularization among women. The net result is a narrowing or reversal of the traditional religiosity gap: men are turning to religion, while women increasingly disengage.

Denominational Differences. Gendered patterns of religiosity differ systematically between Christianity and Islam. In Christian-majority societies, women tend to be more religious than men on almost all measures, including church attendance, prayer, and belief (Inglehart & Norris 2003; Pew Research Center 2016). In Muslim-majority contexts, however, while the evidence on gender gaps in religious beliefs is mixed, men tend to be more active in public worship (Pew Research Center 2016, Sullins 2006). This is largely due to ritual prescriptions: Muslim men are obliged to attend communal Friday prayers, whereas women may fulfill their obligations privately, reducing their visibility in public religious spaces (Pew Research Center 2016).

Differences also arise from theological expectations. In Islam, daily prayer (ṣalāt) is one of the Five Pillars, obligatory for both sexes, while in Christianity prayer is voluntary and individualized. Scholars argue that women's greater emotional expressiveness and caregiving roles may contribute to higher voluntary prayer rates in Christianity (Voas *et al.* 2013), while compulsory Islamic prayer yields less gender differentiation. Cultural context also matters: in Turkey, Alevi Muslim women, whose denomination emphasizes egalitarian practices, participate more in the labor force and are less likely to veil than Sunni women, illustrating how intra-denominational variation can shape gender roles (Akyol & Ökten 2024).

A similar pattern is observed among Jews, where men are more likely to participate in public worship (Sullins 2006). By contrast, women are generally more likely to engage in daily prayer, express belief in God, and identify as religious within both Muslim and Christian contexts. Such gender differences are not evident among Jews (Pew Research Center 2016; Sullins 2006). Moreover, surveys indicate comparable levels of religious service attendance between Hindu and Buddhist men and women (Pew Research Center 2016). Whether these apparent statistical similarities reflect genuine parity or result from limited sample sizes remains uncertain.

Evidence on the gender gap beyond the major world religions is also limited. In a cross-national study of 2,000 individuals across 14 countries, Vardy *et al.* (2022) find that women score higher than men on measures of religiosity directed toward moralizing gods, but not toward local deities, to which men tend to exhibit stronger commitment. These local gods are typically supernatural agents of regional significance and are less associated with moral enforcement.

While large-scale surveys permit comparison of religiosity across countries, they capture a limited subset of religious behaviors and beliefs that are typically associated with Abrahamic religions such as Christianity and Islam. Standard survey measures such as service attendance and prayer frequency assume that religiosity is a unitary construct. However, individuals can interact with religious platforms through different dimensions such as rituals, mystical experience, or community service (Seabright, 2024). Imagistic rituals which are intense and painful are likely to be highly gendered. For instance, the self-mutilation Hindu rituals are typically performed by male followers

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(BBC, 2020). Understanding gender gaps in different dimensions of engagement with religious platforms presents an interesting avenue for future research.

Homosexuals vs. Heterosexuals. Sexual orientation also intersects with religiosity in gendered ways. Overall, lesbian, gay, and bisexual individuals are less religiously active than heterosexuals, reflecting exclusion from many faith traditions (McKenzie and Rouse 2013; Sherkat 2002). Yet within sexual minorities, men and women diverge. Gay men have higher rates of religious participation than heterosexual men, while lesbians have lower participation than heterosexual women (Sherkat 2002). Non-heterosexuals are also more likely than heterosexual women to leave religion altogether ("apostasy"), but at rates comparable to heterosexual men (Sherkat 2002). One interpretation is that gay men retain ties to organized religion more than lesbians, perhaps because they are socialized to remain within church networks, or because affirming subcultures for gay men within religion are somewhat more visible. Lesbians, by contrast, may experience compounded alienation: traditional religions often espouse conservative gender roles as well as heteronormativity, making them particularly inhospitable to women who reject both.

2.3. Other dimensions of the religiosity gender gap

Witchcraft Beliefs. Beliefs in witchcraft are deeply gendered phenomena that have varied across time and space. Historical records from early modern Europe show that most individuals accused and executed for witchcraft were women, reflecting patriarchal associations of witchcraft with female deviance (Khalil & Panza 2025; Leeson & Russ 2018). In many contexts, accusations provide a mechanism for enforcing gender hierarchies under religious auspices. In sub-Saharan Africa, accusations also frequently target women, particularly elderly women seen as unproductive or burdensome. Miguel (2005) documents how economic hardship in rural Tanzania sparked witch-killings, overwhelmingly directed at older women, suggesting that poverty, patriarchy, and superstition combined to make women especially vulnerable.

At the same time, contemporary survey evidence indicates that the gender gap in witchcraft beliefs is not straightforward. Using cross-national data, Gershman (2022) finds that raw prevalence is slightly higher among women, youth, and urban residents, but once socioeconomic factors are controlled for, the gender difference in belief largely disappears. Moreover, witchcraft accusations are not universally female-targeted: Peacey *et al.* (2022) show that in patrilineal African societies two-thirds of recorded accused witches were men, pointing to the role of kinship and male–male competition. Forsyth (2022) highlights similar male targeting in sorcery accusations in Papua New Guinea. Finally, institutional incentives matter. During the Reformation, Protestant and Catholic authorities often used witchcraft prosecutions to signal religious commitment and power, intensifying witch hunts where confessional competition was sharpest (Leeson & Russ 2018). Overall, witchcraft beliefs and accusations reveal an ambivalent pattern: while women are often disproportionately victimized under patriarchal religious regimes, in other institutional contexts men too became the prime targets.

Female Religious Vocation and Leadership. Women's roles in religious vocations and leadership illustrate both constraint and opportunity. In Catholicism, women's entry into convents declined sharply after the 1960s, coinciding with rising secular educational and career opportunities. Ebaugh *et al.* (1996) show that secular options for women were strongly negatively correlated with the number entering religious life across 50 nations. Vatican II also reduced the perceived spiritual hierarchy of religious life,

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further discouraging new entrants (Stark & Finke 2000). This decline had downstream effects, as nuns had historically staffed schools and hospitals; their withdrawal contributed to shifts in female education and fertility outcomes (Gihleb & Giuntella 2017; Berman *et al.* 2018).

Nonetheless, religious vocations have offered empowerment in some contexts. In African traditional religions, women who became priestesses or spiritual leaders often exercised authority beyond male control, commanding respect through their divine association (Bassey *et al.* 2012). Similarly, Pentecostal and Charismatic churches in Africa and Latin America have enabled women to found churches, preach, and hold senior leadership roles (Nyamnjoh & Carpenter 2020). In East Asia and South Asia, Buddhist women are increasingly getting ordained. Once ordained, they receive the highest degrees and become Buddhist scholars and educators themselves (Liang, 2021).

Religious vocations for women can shape outcomes for other religious women by providing role models that shift attitudes and behaviors. In colonial Korea where women were previously invisible in public life due to strict patriarchal norms, the arrival of foreign female missionaries led to the emergence of "Bible women" (i.e., Korean women worked alongside missionaries). Female missionaries and Bible women served as role models for Korean women that contributed to the rise of female political activism (Won, 2025). Similarly, in the Democratic Republic of Congo (DRC), the presence of nuns in Catholic missions may have mattered for female education (Álvarez-Aragón *et al.,* 2025).

In the U.S., female ordination spread widely from the 1970s, though women remain underrepresented at the highest levels. Djupe and Gilbert (2008) provide a historical analysis of this shift, showing that women's ordination in America gained momentum in the 1970s primarily within mainline Protestant denominations and Reform Judaism. Using denominational records and surveys of congregations, they find in a descriptive analysis that religious organizations engaged in ecumenical networks were more likely to adopt female clergy early on, whereas isolated conservative churches largely resisted ordaining women. In 2012, only 11% of American congregations were led by women, concentrated in liberal Protestant denominations and Reform Judaism (Chaves 1996; Pew Research Center 2014). Everton (2018) and Chaves (1997) show that religious organizations embedded in ecumenical networks were more likely to adopt women's ordination, while insular conservative groups resisted. Today, women clergy increasingly shape congregational life, though the gender ratio among pastors lags far behind progress in other professions (Qiao 2025).

2.4. Summary

In summary, the gender gap in religiosity is a multi-faceted phenomenon that has yet to be fully explored by causal studies. Economic reasoning (time allocation and risk-aversion) may explain some portion, social and cultural conditioning may explain another, and historical factors may explain the rest. It is important to recognize that these are average tendencies with many exceptions. Within any given religious community, one will find men who are exceptionally devout and women who are non-religious; the explanations discussed operate at an aggregate level. Moreover, the gap is not universal across all measures: for instance, the Pew Research (2016) study finds that women lead men in daily prayer and affiliation rates, but men slightly outnumber women in weekly attendance globally – largely because of the Islamic practice that men are expected to attend mosque on Friday. As the world modernizes and gender roles

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evolve, it will be interesting to see whether the traditional religiosity gap persists or converges. Some recent evidence of convergence (e.g., in the U.S.) hints that the gap is at least partly contingent on social conditions. Trzebiatowska and Bruce (2012) provocatively ask in their book title "Why are women more religious than men?", and their answer emphasizes that once factors like differential opportunities and socialization are accounted for, women's greater religiosity might not be so mysterious. They even suggest that if and when women achieve parity with men in other spheres, their religiosity may likewise equalize.

3. The impact of religion on gender norms and outcomes

Cultural beliefs are central to shaping women's education and labor market outcomes, and evidence shows that these beliefs persist across generations. Across second-generation Americans and Europeans, studies have found evidence that culture functions as a slow-moving form of capital influencing women's opportunities (among other things) (Fernández 2007; Fernández and Fogli 2009; Fernández 2013). Religion is an important component of this cultural environment. Religion can influence a wide array of outcomes for women and men – from how much and what type of education children receive, to women's participation in the workforce, to fertility choices and family structure, to legal rights and social attitudes. Researchers have approached this broad topic by examining two types of variation: variation in religiosity (i.e., differences in individuals' or communities' levels of religious belief and practice) and variation in religious denomination or affiliation (i.e., differences between societies or groups with different predominant religions or interpretations). We structure this part of the survey by outcome domains, discussing within each domain what is known about religiosity effects versus denomination effects. We pay particular attention to studies that attempt to establish causality. Causal inference in this literature often leverages historical or quasi-natural experiments – for example, missionary expansions, religious shocks or reforms, or instrumental variables such as proximity to religious institutions – to surmount the challenge that religion is endogenous to culture and personal characteristics.

3.1. Gender norms

Religious teachings and institutions have long played a role in shaping societal views about the proper roles of men and women. Many faith traditions historically endorsed a patriarchal family model – for instance, by prescribing male leadership in the household and female domesticity – which can translate into less egalitarian attitudes among believers.[2] At the same time, different denominations and religions vary in their teachings on gender, leading to measurable differences in gender-role attitudes across religious groups. In this section, we review evidence on how major religions and the intensity of religiosity influence attitudes toward gender roles in domains such as work, education, family, and politics.

Religiosity. Most large, organized religious traditions embed patriarchal structures that subordinate women, though the degree and form of subordination vary (Sharma

[2]Anthropological evidence indicates that the nuclear family and a gendered division of labor are near-universal across human societies (Spiro, 1954); even radical egalitarian experiments, such as early Israeli kibbutzim, saw traditional gender roles resurface over time (Spiro, 1979).

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1987). Consistent with this descriptive finding, global survey data (such as the WVS) repeatedly reveal that individuals who report higher religiosity also express more conservative attitudes on gender roles. For instance, they are more likely to agree with statements like "men make better political leaders" or "women should prioritize home and children over career." Guiso *et al.* (2003) show that across the world, religious individuals tend to have certain pro-social economic attitudes (like more trust) but are also more inclined to hold traditional attitudes on women's work and rights. They conclude that religion is associated with "good" attitudes for growth in some dimensions (honesty, work ethic) but "bad" in others, including an anti-female empowerment streak. Later studies have confirmed this pattern at both the individual and societal levels. Across multiple measures of religiosity and gender-inequitable attitudes for up to 200,000 individuals from the WVS, Seguino (2011) documents the same negative relationship between religiosity and gender-egalitarian attitudes. These results are robust to a range of controls, including country and survey wave fixed effects, demographics, socioeconomic confounders, and fixed effects for religious denominations. No single religion stands out as more gender inequitable than others in this study. The relation is confirmed in a recent study using the Life in Transition Survey (LiTS) (De Haas *et al.* 2024), in a cross-country analysis of nearly 100 countries (Norton & Tomal 2009) and across individuals in the US (McKenzie & Rouse 2013). McKenzie and Rouse document that individuals who adhere to more conservative religious beliefs, attend church more often, or believe in the literal authority of the Bible generally report more traditional attitudes on issues like abortion and gender roles. These results were particularly driven by White Americans and Latinos, and less by African Americans.

An important question is whether this relationship is causal. Recent research has moved beyond correlations to identify exogenous shifts in religiosity and examine their impact on gender attitudes and outcomes. Bentzen *et al.* (2025) exploit a shock to individual-level religiosity generated by the faith-based initiatives in the US. These initiatives were implemented to "level the playing ground" for religious groups in social service delivery and aimed at increasing the number of faith-based organizations. Bentzen *et al.* find support for this: Exploiting the staggered roll-out of the initiative, they document that the initiatives raised the number of religious nonprofit organizations. As a result, religiosity of the population rose and with it also conservative religious views, including attitudes against homosexuals and abortion. Also, bans on gay marriages strengthened in these areas and gender gaps in education and wages increased. Similarly, Mello and Buccione (2023) exploit quasi-random variation in the introduction of a Pentecostal church television channel in Brazil to identify religion's impact on gender norms. They find that exposure to the channel significantly increased Pentecostal affiliation and, consistent with the church's conservative doctrine, led to higher fertility, lower female labor force participation, and less educational attainment for women (with no comparable effects on men).

Complementary evidence comes from another quasi-experiment – this time one that exogenously reduces religiosity. Arold *et al.* (2025) examine the long-run effects of German states abolishing compulsory religious education and replacing it with secular ethics classes. Different West German states phased in this reform at different times from the 1970s to the 2000s, which the authors use in a difference-in-differences framework. Crucially, the reform reduced religiosity in the cohorts of students who received ethics instruction instead of intensive religious classes. Decades later, the less-religious cohorts have fewer children, are more likely to participate in the labor force and work longer hours, and enjoy higher earnings on average than slightly older peers who

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underwent traditional religious instructions. We interpret this as evidence of a shift in the family–career trade-off that individuals are making. The researchers detect no adverse effect on general moral or civic values, isolating the influence of reduced religiosity itself.

There may be different reasons for these negative effects of religiosity on pro-female attitudes. Generally, studies argue that religiosity reinforces conservative social norms (Norton and Tomal 2009). Sharma (1987) contends that the world's major religious traditions, including Hinduism, Buddhism, Judaism, Christianity, and Islam, as well as smaller traditions, all embed patriarchal structures that subordinate women, though the degree and form of subordination vary. Seguino (2011) explains this by referring to the hierarchical structure of religion. In such hierarchical structures, a dominant factor in shaping gender attitudes is the views held by those at the top of the religious structure at any given point in time. In particular, religious institutions may reflect patriarchal values to buttress the economic, social, and political power of males (Norris & Inglehart 2004; Sen 2007). Many religions explicitly promote gender-differentiated roles as part of their teachings or tradition (e.g. male clergy or household headship), which lends moral legitimacy to patriarchal arrangements. These teachings can entrench a belief that traditional roles are divinely sanctioned, making followers (both men and women) internalize and reproduce them. Generally, divine legitimacy theory emphasizes religion as one method of legitimizing power (Weber 1922). Bentzen and Gokmen (2023) document the use of religion for power across all the major religions. Thus, when the holders of power are men, the use of divine legitimacy may result in the submission of women. In this regard, a striking puzzle is why women, who ostensibly bear the brunt of restrictive gender norms, often remain highly involved in religion rather than abandoning it. A simple answer is that in some places, the patriarchy is so strong that leaving religion is not a choice. Blaydes and Linzer (2008) provide evidence from Muslim-majority countries that women's support for conservative religious movements is higher when their economic opportunities are poor. Specifically, they find female adherence to fundamentalist Islam is greatest in countries with low female employment prospects and large gender wage gaps.

However, the tight relation between religiosity and traditional gender roles extends to societies where women could leave religion if they wanted to. One line of reasoning emphasizes that women derive certain compensating benefits from religious participation that can outweigh the costs of patriarchal norms. Religion provides community, social support, and a sense of meaning or hope that might be especially valuable given women's constraints in other domains. An intriguing example is that the church constitutes a popular marriage market in some places. In surveys of churchgoers in Ghana, 28% of the married say they found their spouse through church, 48% of the church population are single, of which 60% expect to meet their future spouse through church (Auriol *et al.* 2020; Seabright 2024). Psychological factors further contribute. As we have seen above, research on gender and religiosity posits that women, on average, may be more risk-averse and thus less willing to abandon the promise of salvation or divine favor (Miller and Hoffmann 1995). Additionally, identity formation theories (Akerlof and Kranton 2000) suggest that women who have been socialized in a religious milieu derive a sense of self-worth from fulfilling the roles their religion prescribes (such as devoted mother or modest community caretaker). Another explanation is simply cultural transmission. Religiously influenced gender norms persist partly because they are passed down within families (Bisin and Verdier 2001). Bisin and Verdier present a theoretical model in which parents deliberately transmit their cultural and religious

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traits – including gender-related norms – to their children. Finally, Iannaccone's (1992) club-good theory highlights how "strict churches" survive by demanding costly commitments to screen out less committed members and mitigate free-riding, thereby strengthening the overall community. Women's continued loyalty to such strict religious groups can thus be understood in a club-good context: those who remain get to enjoy a tight-knit, high-support network – a valuable club good – and the stringent norms (including gender norms) are part of the price of admission. Another answer to the question of why women don't leave religion despite bearing most of the cost of traditional gender roles is that they *do* leave. Recall the recent analyses that show a closing of the gender gap in religiosity among the young.

It is worth noting that not all religious influences entrench conservative norms; some religious experiences can liberalize attitudes. Clingingsmith *et al.* (2009) study the Islamic Hajj pilgrimage via a lottery-based natural experiment in Pakistan and find that participating in the Hajj made pilgrims more tolerant and egalitarian in outlook. Specifically, Muslims who won the random lottery to attend the Hajj later showed greater acceptance of women's education and women's work outside the home, as well as more positive attitudes toward people of other religions, compared to those who did not go. In this case, a deep religious ritual increased piety but also enhanced support for female empowerment and inter-group harmony.

Religious Denominations. While most studies mentioned above either conducted analysis within one specific religious denomination or within multiple religious denominations separately (via the inclusion of religious denomination fixed effects), other studies have examined differences in gender attitudes across religious denominations. One consistent finding is that adherents to Islam, on average, score lower on gender equitable attitudes, relative to other adherents. For example, Inglehart and Norris (2003) find that Muslim-majority societies had some of the lowest scores on their Gender Equality Scale (based on attitude surveys), reflecting more patriarchal values on average, whereas Christians (or those without a religious denomination) score highest. Part of this is differences in development levels, but even at similar levels of development, they find Western Christian heritage countries to be more liberal on gender than Middle Eastern Muslim ones.

These studies are correlational, which means that other confounders, such as development and general modernization can explain results. To get at causality, Miho *et al.* (2024) exploit the forced ethnic deportations under Stalin in the 1940s in the Soviet Union as a natural experiment. Entire ethnic groups were uprooted and resettled in distant regions. Crucially, these groups had different religious backgrounds and gender norms. Miho, Jarotschkin, and Zhuravskaya compare two groups of deportees (that were both relocated arbitrarily): Protestants and Muslims. Localities that received a higher share of Protestant deportees (relative to Muslim deportees or others) today exhibit more egalitarian gender attitudes, higher female labor force participation, and more women in leadership positions in firms. In contrast, areas that received more Muslim deportees did not see a significant change relative to otherwise similar localities. The mechanism appears to be horizontal cultural transmission: Protestant communities historically had more gender-egalitarian norms (for instance, Protestant women in the Russian Empire had higher literacy and were more likely to work outside the home than Muslim women). When Protestants were resettled among (mostly Russian) local populations, over generations some of their attitudes and behaviors spread to neighbors through intermarriage, observation, and interaction. On the other hand, Muslim deportees' norms (which were more gender-conservative regarding women's seclusion)

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did not spread as effectively, perhaps because the Soviet environment (which encouraged female labor as part of communist ideology) was less receptive to those norms, or because the deported Muslim communities remained more insular. The diffusion effects were stronger where the local host population was culturally closer to the deportees. Russian locals (themselves Christian-background) were more influenced by Protestant newcomers than Central Asian locals (Muslim-background) were, suggesting that people may more readily adopt norms from out-group members who are not "too foreign" to them.

Anderson (2025) surveys anthropological and historical evidence on gender norms and religion, noting that indigenous and polytheistic religions often had spaces for women's power (e.g., female goddesses, priestesses), whereas large organized monotheistic religions – notably the Abrahamic trio of Judaism, Christianity, Islam – evolved in strongly patriarchal contexts and their scriptures and institutions largely reflect male authority. She also points out exceptions: for instance, certain African traditional religions revered women as spiritual mediums, and in some Buddhist sects, women can attain significant roles (though Buddhism too has a patriarchal monastic hierarchy generally).

Confucianism has been associated with patriarchal family structures in East Asia, emphasizing women's subordination. These cultural imprints persist in modern attitudes: societies with a Confucian heritage tend to exhibit more conservative gender views. Vu and Yamada (2024) provide evidence from Vietnam, using the number of successful test takers in the imperial examination system (1075–1919) as a proxy for Confucian influence. Exploiting distance to exam centers and the southward expansion of territory as instruments, they show that historically Confucian areas today have lower female education and health outcomes and stronger son preference. Their results indicate that Confucianism's patriarchal framework continues to shape gender inequality, consistent with broader evidence that East Asian societies influenced by Confucianism hold more traditional gender attitudes (Guiso *et al.* 2003). Kung and Ma (2014) further show that Confucian norms promoting social hierarchy and obedience had tangible effects on societal stability. Studying Qing Dynasty China (circa 1650–1910), they find that regions with strong Confucian influence – proxied by the density of Confucian temples and the prevalence of honored "chaste" widows – experienced significantly fewer peasant rebellions in response to economic distress (crop failures). By instrumenting for Confucian influence using the birthplaces of ancient Confucian sages, the authors argue this relationship is causal. The implication is that entrenched Confucian patriarchal values not only sustained female subordination but also suppressed social unrest, reflecting the powerful order-maintaining role of this cultural doctrine.

Hindu traditions similarly imposed strict gender norms, rooted in ideals of female purity and family honor. Practices such as purdah, dowry, and patrilocal marriage curtailed women's autonomy (Dyson & Moore 1983; Jayachandran 2015). Jayachandran (2015) shows how these norms contributed to low female employment and skewed sex ratios. In historical data for population shares in South Asia 1881–1931, Fenske *et al.* (2025) document higher male-biased sex ratios among Sikhs, followed by Hindus, Muslims, and Jains. Contemporary evidence confirms the persistence in these gender norms: Desai and Temsah (2014) report that around 60% of Indian households still observe female seclusion in the form of veiling, while a large Pew Research Center (2022) survey finds that most Indians, including women, endorse traditional gender roles such as wives' obedience and disapproval of female employment after marriage.

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Dincecco *et al.* (2024) further explore regional variation in India's gender norms. They compile data on pre-colonial conflict intensity across Indian districts and find that areas with greater historical conflict exposure exhibit more male-biased gender norms today (e.g., fewer girls in school, more male-centered institutions). Crucially, however, this legacy effect is mitigated in locales with a strong tradition of female deity worship: districts containing Hindu temples devoted to goddesses have significantly less skewed outcomes. The authors interpret this as religion moderating culture – venerating powerful female deities instilled countervailing norms that softened the patriarchal impact of violence.

In summary, in many settings, high levels of religiosity, regardless of denomination, appear to entrench conservative norms that limit women's opportunities in education and the workforce. In the words of Inglehart and Norris (2003), "the evidence indicates that traditional religious values and religious laws have played an important role in reinforcing social norms of a separate and subordinate role for women as housewives and mothers, and a role for men as patriarchs within the family and primary breadwinners in the paid workforce." Regarding the impact of denominational differences, studies find that adherence to Islam, Confucianism, and Hinduism is often associated with more inequitable gender norms, whereas adherence to Christianity and some indigenous and polytheistic religions is associated with preferences for more equitable gender norms.

3.2. Education and labor market outcomes

Education and labor market outcomes are fundamental outcomes often linked with religion and gender. For instance, gender-inequitable norms may directly influence gender gaps in education and labor market outcomes, a stance in line with cultural economists (e.g., Fernández and Fogli 2009). At the same time, many major religions historically influenced who gets educated, potentially creating gendered differences across denominations. Here we review evidence from historical, cross-country, and micro-level studies on how religion has impacted female (and male) educational and labor market outcomes. This literature is burgeoning with regards to denominational differences in education, particularly comparing Protestants to Catholics, which will be our starting point.

Protestantism. Martin Luther, the Protestant Reformation leader, explicitly advocated for girls' schooling so that women could read the Bible. This stands in contrast to the Catholic Church, which placed less emphasis on universal literacy. To examine whether this narrowed the gender gap in education for Protestants, relative to Catholics, Becker and Woessmann (2008) use 19th century county-level data from the Prussian census on school enrollments by gender and religion. They find that regions with a higher share of Protestants had significantly smaller gaps between boys' and girls' basic education enrollment. In predominantly Protestant counties, girls' enrollment almost matched boys', whereas in heavily Catholic counties a sizable gap persisted (with girls lagging). To address the concern that Protestant areas might differ in other ways (like economic development) from Catholic areas, the study exploits that the Protestant Reformation spread from Wittenberg. The idea is that regions closer to Wittenberg were more likely to become Protestant for reasons unrelated to education. Using this instrumental variable, they confirm a causal effect: Protestant dominance led to a decrease in the female education gap. Similar patterns appear elsewhere: in Piedmont, Italy, communities of Waldensians (a proto-Protestant sect) achieved notably higher

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female literacy and smaller gender gaps compared to neighboring Catholic towns (Berlanda *et al.*, 2023). Across the US, states with stronger Protestant institutional presence during their early development have significantly higher rates of women in senior corporate leadership today (Qiao 2025). The study by Miho *et al.* (2024) discussed earlier documents that local native populations exposed to Protestant deportees display higher female education levels and more gender-equal attitudes than those exposed to Muslim deportees, despite similar initial conditions.

Denomination-specific effects on the education gender gap also appear in studies of colonial-era Christian missions in Africa and Asia. Many missions built schools, often educating girls for the first time in those regions. Nunn (2014) documents that areas in Africa with historical mission stations tend to have higher levels of female education even in the late 20th century, suggesting a persistent effect. A recent study by Calvi *et al.* (2022) examines districts in colonial India where Protestant missionaries were active in the 19th and early 20th centuries and compares them to areas with fewer or only Catholic missions. Using a combination of historical mission data and modern census and survey data, the authors find that areas exposed to Protestant missions have higher female literacy and smaller contemporary education gender gaps. Probing mechanisms, they find that Protestant missions were more likely to establish girls' schools and that female converts or the presence of missionary women played a significant role in educating girls. Okoye and Pongou (2024) exploit former colonial boundaries and show that villages on the side with greater mission activity have persistently higher schooling levels and lower fertility rates, particularly for women. Likewise, in South Korea, the spread of Protestant churches in the early 20th century empowered women through education (Izumi *et al.*, 2023). Regions where missionaries established schools saw a short-run rise in women's literacy and even employment opportunities, while men's outcomes were unchanged. This indicates a targeted impact on female human capital. However, Izumi *et al.* (2023) also find that over nearly a century, these regional differences faded as the country's educational system became universal – suggesting that missionary-induced advantages for women were eventually overtaken by broader national progress.

An interesting counterpoint comes from Becker *et al.* (2025), who study missions in Africa with a newly compiled dataset including the gender of missionaries. In their data spanning 29 African countries, they find that both Protestant and Catholic missions contributed to raising educational attainment for both boys and girls in Africa, resulting in generally increased gender equality. However, they do not find strong evidence that Protestant areas are significantly ahead of Catholic areas today in terms of female education. Furthermore, the reduced gender gaps in education did not spill into improved labor market outcomes for women, potentially because the education provided by the missions was highly segregated by gender. While African boys were taught arithmetic and advanced literacy, girls received instructions in domestic skills, such as needlework, besides basic literacy and Christian devotion (Becker & Meier zu Selhausen 2025; Coquery-Vidrovitch 1997; Leach 2008; Musisi 1992; Okonkwo & Ezeh 2008). Similarly, in the Democratic Republic of the Congo (DRC), Álvarez-Aragón, Guirkinger, and Villar (2025) document a lack of differences in the education of women between exposure to Catholic and Protestant missionaries in the long-run. Another counter-example comes from de la Croix and Vitale (2023). Using data on 108 female academics in Europe before 1800, de la Croix and Vitale find that more female academics work in Catholic areas of Europe, relative to Protestant areas.

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Ananyev *et al.* (2025) study the influence of Evangelical Protestant Christianity – known for emphasizing traditional gender roles – on female labor supply. To obtain quasi-exogenous variation in the spread of Evangelism in the US, they use the density of graduates from Liberty University (a prominent evangelical institution). They find that areas with more Liberty University alumni (who often become church leaders, teachers, or community figures) subsequently exhibit lower female labor force participation and higher fertility rates than comparable areas, presumably because the evangelical presence promotes stay-at-home motherhood and larger families. Ananyev, Poyker, and Yarkin interpret their results as documenting that evangelical Protestantism's resurgence or concentration can shift norms and behaviors in a conservative direction. Ananyev and Poyker (2025) note that Evangelical Christian communities (such as certain megachurch networks) preach "complementarian" gender roles – the idea that men and women have divinely ordained distinct roles, with men as breadwinners and leaders and women as housewives.

Islam. The relationship between Islam and female education is complex and context-dependent. At a broad cross-country level, Muslim-majority societies have tended to exhibit larger gender gaps in schooling favoring males. Simple correlations show that countries with a higher proportion of Muslims have lower female-to-male education ratios on average (Cooray & Potrafke, 2011; Norton & Tomal, 2009). However, these patterns are not necessarily causal and may reflect regional, economic, or cultural circumstances beyond religion itself. Many Muslim-majority countries are in regions that historically lagged in female schooling for various reasons (poverty, conflict, conservative customs). The role of Islam per se becomes clearer when examining within-country variations and policy changes. Again referring to the study by Miho *et al.* (2024), who find that areas receiving Protestant deportees later exhibited higher female labor force participation and more women in leadership positions in firms, these effects are relative to areas that received Muslim deportees and hence reveal lower female labor force participation in the latter areas. Similarly, Joslin and Nordvik (2021) find that Islam can amplify women's withdrawal from the workforce during economic booms. Exploiting global data on major resource discoveries as exogenous economic shocks, they show in a difference-in-difference analysis that resource windfalls in historically Muslim societies led to significant declines in women's employment (as rising male incomes reinforced norms of female seclusion), whereas non-Muslim societies did not see such effects. Multiple causal studies examine head scarf bans, Taliban exposure, and other shocks, and their impacts on education and labor market outcomes. We relegate these studies to the section on religiosity, as they all compare effects within a Muslim area.

Other Religious Traditions. While Christianity and Islam have received the most attention, other religions and ethno-religious traditions have also been linked to gender gaps in education and labor market outcomes. Broad cross-country patterns suggest that traditionally patriarchal cultures – often associated with certain religions – tend to invest less in girls' schooling. For instance, Hindu-majority countries have on average exhibited larger male-favoring education gaps than non-Hindu countries at similar income levels (Norton & Tomal, 2009). In India, where Hinduism is dominant, longstanding son preference and conservative gender norms may have contributed to lower female literacy rates throughout much of the 20th century. Similarly, countries or regions with a high share of indigenous or animist belief systems have been associated with wider education gender gaps (Norton & Tomal, 2009). One possible explanation is that in some traditional societies, formal education (especially for girls) was not historically

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valued or was seen as conflicting with customary gender roles. However, these findings are mostly correlational. What evidence exists implies that where religious or cultural traditions strongly favor male authority and lineage, girls' education has historically suffered. There are counterexamples. For instance, in Israel's ultra-Orthodox Jewish (Haredi) community, men are expected to engage in full-time religious study while women become breadwinners. This norm potentially leads Haredi women to attain more secular schooling and job training than Haredi men (Foscarini 2014). Compared with Catholics, Protestants, and Muslims, Orthodox Christians are more supportive of women's work possibly because Orthodox believers tend to consult external ideas and opinions to shape their own opinions (Markovic *et al.* 2025). At a global level, Zhang (2024) finds that the prevalence of major religions corresponds to systematic differences in women's representation in firm leadership. Countries with larger Buddhist populations exhibit significantly higher shares of female-led firms (and relatively stronger performance of those firms), whereas those with more Muslims have fewer women business leaders – a gap largely explained by differences in education, female labor supply, and other development factors.

Religiosity. Beyond religious affiliation, the intensity of religiosity – how devout or observant a community is – can influence female education and labor market participation. As we have seen, highly religious communities, regardless of denomination, often hold more traditional views on gender roles that can impact decisions around schooling and labor market participation of women outside the home. In addition to stronger attitudes against gender equity, Norton and Tomal (2009) also find lower female labor force participation and educational attainment among more religious countries, even after accounting for GDP per capita and other confounders. Using the 2008 Demographics and Health Survey for Turkey, Dildar (2015) confirms these correlations at the individual level; religious women are more likely to internalize patriarchal norms and have lower labor force participation. Importantly, when controlling for the gender attitudes directly, the effect of religiosity diminished, suggesting that it is indeed the norms that are the key mechanism. This indicates that a devout woman in Turkey is less likely to work because she (and her family) might believe that a woman's proper role is at home – a belief at least partly rooted in religious teachings. In contrast, a more secular Turkish woman is more likely to seek employment, all else equal. In Germany, Heineck (2004) finds that while denominational affiliation (Catholic vs. Protestant) has only a minor impact on labor force participation, women who regularly attend church are significantly less likely to be employed. Using household data, he also observes that a wife's labor supply is lower when her husband is strongly religious.

Moving beyond correlations, the study by Bentzen *et al.* (2025) confirms larger gender gaps in education and wages in the US after the faith-based initiatives increased the supply of religious organizations and heightened population-level religiosity.

Multiple studies have examined causal effects of religiosity on female education and labor force participation within Muslim societies. Evidence from country case studies indicates that Islamic institutions can either hinder or help female education, depending on how religious principles are translated into policy. On one hand, extreme interpretations of Islam have imposed barriers to girls' schooling. The starkest example is Afghanistan under Taliban rule (1996–2001 and again 2021-present), when an outright ban on female education was enforced. Noury and Speciale (2016) use a difference-in-differences approach exploiting variation in girls' exposure to the Taliban by birth cohort and region. They find that each additional year of Taliban control during

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a girl's school-age years caused about a two percentage-point drop in her probability of completing basic education. Girls who came of age entirely under the Taliban regime were dramatically less educated than slightly older cohorts who had started school before the ban. This shock had ripple effects: the loss of educational opportunity translated into earlier marriages and higher fertility for the affected women. In this case, the restrictive religious doctrine directly curtailed female education with long-run consequences for women's welfare. On the other hand, Islamic political movements in more open societies have sometimes actively promoted female schooling. In secular Turkey, Meyersson (2014) exploits a natural experiment in local elections to study this issue. During the 1990s, the Islamic-oriented Refah Party narrowly won control of some municipalities, enabling comparison to similar areas where it narrowly lost. Meyersson shows that in municipalities won by the Islamist party, female high school education improved significantly relative to the secular-led municipalities. Over a decade, these towns saw higher rates of girls completing secondary school and a reduction in teenage marriage. This improvement was not driven by any Islamic injunction to educate women, but by pragmatic policy choices. Islamic mayors used religiously motivated charities and social networks to invest in schools, scholarships, and dormitories for girls – effectively removing practical barriers. The result was greater educational opportunity for young women in conservative communities where the girls would otherwise have been kept at home instead of being sent to the previously secular schools.

The rising gender equality with Islamic rule in the latter case seemingly worked by offsetting the suppression of women in religiously conservative areas. Bazzi *et al.* (2025) examine this further. They exploit a natural experiment that arose in Indonesia during the 1970s and 1980s. During this period, Indonesia's secular authoritarian government rolled out a massive public-school expansion while also implementing a ban on wearing the Islamic headscarf (jilbab) in state schools. Assembling data on type of schooling (secular vs. Islamic) for girls who were of school age under the headscarf ban, Bazzi *et al.* (2025) find that overall enrollment rose in regions where new state schools were built. However, devout Muslim families often chose to send their daughters to Islamic schools (madrasas) to avoid the no-headscarf rule. As a result, cohorts of girls who faced the headscarf ban did continue their education, but they were more likely to do so in private religious schools and to pursue Islamic secondary education. Girls affected by the ban ended up with more years of Islamic schooling (and slightly less secular schooling) than those not subject to the ban. This substitution effect implies that the state's restriction on religious expression in schools inadvertently pushed families toward alternative educational institutions. Importantly, once the headscarf ban was lifted in the 1990s, public schools saw increased attendance by Muslim girls. Allowing religious attire removed a barrier, making conservative parents more comfortable with formal schooling.

Corekcioglu (2021) examines a related policy in Turkey – a headscarf ban for public-sector jobs – and found that such bans had the unintended consequence of reducing public employment among religious women without necessarily increasing it among secular women, leading to overall fewer women in those jobs. When women are not allowed to wear headscarves to work, Islamist mayors employ less women vis-à-vis secular mayors. In a similar vein, Bursztyn *et al.* (2020) highlight how in Saudi Arabia – a country with very low female employment and a strict Wahhabi Islamic gender ideology – many men privately didn't object to their wives working but believed that others did (a misperception of social norms). Their informational experiment (providing men with accurate information that peers were more accepting of women's

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work than assumed) increased the probability that men allowed their wives to apply for jobs. This underscores that religious or traditional norms (in this case underpinned by an austere interpretation of Islam) can suppress female labor, but if those norms shift (or are revealed to be less uniform), labor outcomes can change.

Akyol and Ökten (2024) zoom in comparing two distinct Muslim denominations; Alevi Muslims and Sunni Muslims in Turkey. Alevis and Sunnis share ethnic and national background but differ in religious practice and gender norms – Alevis are known for a more egalitarian interpretation of Islam (men and women worship together, for instance), whereas Sunnis in Turkey are known for their higher religious observance and conservatism. Using a 2015 nationally representative survey that identified respondents' specific Islamic denomination, Akyol and Ökten find stark differences in women's labor outcomes: Alevi Muslim women are about 11.6 percentage points more likely to participate in the labor force than otherwise similar Sunni Muslim women. Men show no such difference by denomination. The study controls for a host of factors (education, region, urban/rural, etc.). They further probe mechanisms and find that Alevi women and men express more progressive views on women working and are less strict in religious observance (Alevis often regard their identity as cultural and are less bound by formal Islamic law). While the mechanism in these latter studies involves whether parents, husbands or employers find women in the public appropriate, a study by Bursztyn *et al.* (2020) point to another (yet related) mechanism: The perception that certain behaviors (such as women working outside the home) are stigmatized. In their study, parents, husbands or employers could themselves find working women appropriate but feared that other men would not. Yet other studies link the religiosity level of the individuals themselves to their own gender norms (e.g. Seguino 2011).

In summary, studies find that gender gaps in educational and labor market outcomes differ across religious denominations and across degrees of religiosity within these denominations. Increasing religiosity, regardless of denomination, appears to limit women's opportunities in education and the workforce. The key mediators are how religious norms interpret women's roles and how religious organizations engage with education. Where religious doctrine explicitly or implicitly supports female learning (for example, emphasizing the importance of mothers being educated or valuing the ability to read sacred texts), devout communities may promote female schooling and labor market participation. On the other hand, where religious commitment is tied to safeguarding traditional gender hierarchies, it may perpetuate biases against educating daughters, restricting their access to the labor market.

3.3. Fertility and health

All major religions have teachings on sex, contraception, and family life, and religious values often influence decisions about marriage and childbearing. Historically, more religious populations have tended to have higher birth rates, in part because many religions encourage large families or discourage contraception and abortion. The gender implications of fertility are significant: high fertility often correlates with lower female educational and career attainment (due to child-rearing responsibilities), and restrictive reproductive norms can affect women's health and autonomy. Here, we examine how religiosity and religious affiliation affect fertility rates, contraception use, and related outcomes like age at marriage or abortion. We also consider evidence on child health

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and survival, which is tied to fertility decisions and maternal care and can be influenced by religious practices (such as fasting or traditional health behaviors).

Religious Denominations. Classic demographic studies observed that Catholic couples tend to have more children than Protestants, largely attributed to the Catholic Church's prohibition of contraception and abortion (Lehrer 2004; Westoff and Jones 1979). In mid-20th century U.S. data, for example, Catholics had higher average fertility than mainline Protestants, while Jews had the lowest fertility among major denominations (Lehrer 2004). However, by the late 20th century these gaps had narrowed. As contraceptive use became widespread, the "Catholic fertility premium" diminished, and recent U.S. surveys show no significant difference in the number of children between Catholics and Protestants (Zhang 2008). Indeed, one study using 2002 U.S. data finds fundamentalist Protestants, other Protestants, and Catholics all exhibit similar fertility levels once socioeconomic factors are accounted for (Zhang 2008). Berman *et al.* (2018) explore the link between declining religiosity and declining fertility in Europe, with the speed of the fertility decline being particularly pronounced in Catholic countries in Southern Europe. They note that as church attendance (especially Catholic mass attendance) fell sharply from the 1960s onward in Europe, fertility rates also fell – the "empty pews to empty cradles" phenomenon. To explain the phenomenon, the authors show that the decline in the share of nuns strongly predicts the fertility decline. The authors argue that nuns were instrumental in providing childcare services. While many factors contributed to Europe's demographic shift (economic growth, female education, etc.), this research highlights that cultural change in the form of declining religiosity was one factor making smaller families more acceptable.

Another angle is how religious competition and conversions might affect fertility. A study by Guirkinger and Villar (2025) on the Congo suggests that areas with more intense missionary competition or presence saw changes in fertility patterns. In colonial Congo, Catholic missions sometimes promoted pronatalist policies (encouraging births among the local population), partly to increase the flock. Guirkinger and Villar found that regions with early mission influence had different fertility trajectories – often an initial encouragement of births (as the Catholic nuns promoted an "ideal Christian wife" focused on reproduction), but later on, possibly earlier transition to lower fertility as education spread.

Large fertility differentials persist in some settings, most notably between Muslim and non-Muslim populations. Cross-country analyses indicate that Muslim-majority societies often have higher fertility rates than those with predominantly non-Muslim populations at similar levels of development (Heaton 2011). In sub-Saharan Africa, a comprehensive Demographic and Health Surveys study reports that Muslim women typically marry earlier and bear more children than Christian women in the same country (Westoff and Bietsch 2015). Some scholars argue that historically stronger kinship networks and norms in Muslim communities may encourage early marriage and childbearing, sustaining a higher fertility norm (Bhalotra *et al.* 2010; McQuillan 2004). Moving beyond correlations, Okoye and Pongou (2024) study variation within Northern Nigeria where provinces on one side of the border had lower likelihood of mission stations due to historical restrictions on Christian missionary activities and provinces on the other side of the border faced no such restrictions. They find that areas with heavy missionary presence saw earlier adoption of education and eventually lower fertility. Thus, denomination mattered: Christianized regions

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underwent a demographic transition sooner than regions that remained under more traditional or Islamic influence.

Recent work has expanded beyond Abrahamic religions to traditional belief systems. Álvarez-Aragón (2025) finds that ancestral beliefs are associated with higher fertility. Similar findings are found in the context of East Asia (Hu & Tian, 2018). Further, Zhang (2024) studies the role of son preference on sex selection by exploiting the Kuomingtang's retreat to Taiwan which randomly assigned migrants with different son preferences to localities in Taiwan. He shows that areas with higher shares of migrants from provinces with higher ancestor worship density have more male-biased sex ratios, consistent with horizontal transmission of son preferences.

Religion's impact extends to child health and survival outcomes. Bhalotra *et al.* (2010) analyze Indian survey data and confirm the so-called Muslim mortality paradox observed in India: despite higher poverty levels, Muslim infants and children have historically had lower mortality rates than Hindu infants. They find that even after accounting for an extensive range of socioeconomic and maternal health factors, Muslim under-five mortality rates remain about 10–20% lower than Hindu rates in the 1990s. Researchers have proposed several cultural mechanisms for this advantage. One is lower son preference among Muslims: Hindu families have traditionally exhibited a stronger preference for sons, sometimes neglecting daughters' health and nutrition, which can raise girl child mortality. Muslim families, in contrast, show more egalitarian treatment of sons and daughters on average, which may contribute to better female child survival and thus lower overall mortality (Bhalotra *et al.* 2010). In Nigeria, Milazzo and Van de Walle (2021) find that Muslim widows have significantly higher nutritional status (body mass index) than Christian widows, especially in rural areas. Using survey data and controlling for local fixed effects, they attribute this advantage to Islamic inheritance norms and the acceptance of polygamous remarriage, which allow Muslim widows to retain property and remarry – buffering them from the severe nutritional deprivations that Christian widows often face after a husband's death. Other hypothesized factors include dietary practices (Muslims' avoidance of alcohol and certain unhygienic foods), circumcision and purdah practices that could affect maternal and infant health, and tighter-knit kin networks that provide support during pregnancy and child-rearing (Bhalotra *et al.* 2010; Bhat and Zavier 2005; Guillot and Allendorf 2010). Over time, as socioeconomic conditions among Hindus improved and fertility declined (reducing competition for resources among children), the Muslim survival advantage in India has narrowed, illustrating how religious differentials in child health can change with development (Bhalotra *et al.* 2010; Guillot and Allendorf 2010).

Analyses of missions provide evidence of additional health differences across religious denominations. Fors *et al.* (2024) document that historical Christian missions triggered a lasting reduction in the practice of female genital cutting (FGC) in Africa. They combine data on early 20th-century mission locations with modern Demographic and Health Surveys (appr. 410,000 women across 14 countries) to measure the long-run impact on women's FGC status. They find that women living closer to historical missions are substantially less likely to have undergone FGC. Importantly, mission placement was not correlated with pre-colonial FGC practices, supporting a causal interpretation.

Historical data from other contexts also show religion-related health differentials: for instance, in late 19th-century Europe, Jewish communities in several cities recorded substantially lower infant mortality than Christian neighbors, a pattern attributed to factors like better hygiene (rooted in religious practices around cleanliness) and strong community charity for poor mothers (Derosas 2003).

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Using a regression discontinuity design, Bhalotra *et al.* (2021) examine the role of politicians' religious identity in India and find that districts narrowly won by Muslim politicians led to lower rates of sex-selective abortion compared with districts narrowly won by Hindu politicians. Strikingly, the impact of Muslim politicians is larger among Hindu and Sikh families, indicating that minority group leaders can affect reproductive behaviors of members among the majority group. In terms of mechanism, the authors show that the impact is larger shortly after the enactment of a federal law that banned pre-natal sex determination, suggesting that Muslim politicians likely used the law as a tool to reduce abortion rates. In India, Muslims have stronger stated preferences against abortion than Hindus. This led to lower provision of family planning (since Muslims in India often resist family planning programs), which in turn was associated with higher fertility among Muslim constituents. Their result highlights that religious identity of politicians can affect reproductive health policy and thereby outcomes for women.

Religiosity. Surveys consistently show that highly religious groups express stronger disapproval of abortion than more secular populations, and abortion rates tend to be lower among those identifying with these groups. In the United States, for example, regions with a high concentration of conservative Protestants have significantly lower likelihood of having an abortion clinics per capita than more secular regions (Adamczyk and Valdimarsdóttir 2018). Also, American women who describe religion as "very important" in their daily life have about 0.8 more children ever born than women who say religion is not important – a sizable gap even after controlling for education and other factors (Hayford and Morgan 2008). They also express higher ideal family sizes and intend to bear more children. This pattern is echoed in Europe: Practicing Christians (those who attend services regularly) report higher birth rates than nominal Christians or the non-religious (Frejka and Westoff 2008). Part of this is normative – devout individuals often adhere to religious teachings that discourage artificial birth control or any termination of pregnancy. Part is also situational – those who are very religious are more inclined to avoid premarital sexual activity, reducing the incidence of pregnancies that might prompt contraceptive use or abortion in the first place. In predominantly Muslim settings, similarly, survey data often show that the most religiously observant women (e.g. those who pray daily or have completed the Hajj) have elevated fertility compared to less observant women, controlling for basic demographics (Westoff and Frejka 2007). These correlations align with theoretical expectations: when religion is a central guiding force in people's lives, it often encourages earlier marriage, childbearing within marriage, and a positive view of large families as a divine blessing, all of which raise fertility (Lehrer 2004; McQuillan 2004).

A critical question is whether these religiosity effects are causal. More religious individuals might differ in unobserved ways – for example, they may be more family-oriented or traditional to begin with, and those traits, rather than religiosity per se, could drive higher fertility. Bassi and Rasul (2017) study the effect of a Papal visit on fertility in Brazil as an exogenous shock to the stance of the Catholic Church about contraceptive use. In 1991, Pope John Paul II toured several Brazilian cities and delivered messages reinforcing the Church's stance against birth control. Using survey data before and after the visit, Bassi and Rasul find that women exposed to the Pope's visit showed a significant drop in stated intentions to use contraception and correspondingly an upsurge in the frequency of unprotected sex in the short run. There is a significant increase in the hazard rate for births nine months after Papal visit. Chung *et al.* (2025) find evidence of another "religiously inspired baby boom." In 2007, the head of the Georgian Orthodox Church announced he would personally baptize any third or higher-

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order child born to a family, in an effort to encourage births in a country with declining population. This spiritual incentive apparently resonated: fertility data show a notable uptick in birth rates in the years after 2007, especially for third births, suggesting that some families were motivated by the Patriarch's promise (Chung *et al.* 2025). The authors use demographic records to confirm that this effect was more pronounced among those likely to be followers of the Orthodox Church. This quasi-experiment indicates that religious leaders can influence fertility behavior – in this case by essentially reframing a third child as a spiritually rewarded act. Another policy exploited to obtain exogenous increases in religiosity was the faith-based initiatives as we have seen above. Consistent with the reviewed findings, this quasi-experiment resulted in increased opposition to abortion (Bentzen *et al.* 2025). Marie and Zwiers (2025) study the impact of religious opposition to birth control access by health professionals in the Netherlands. In the Netherlands, women could only obtain oral contraceptives with a doctor's prescription, which essentially makes the doctors the "gatekeepers" of the pill. The authors find that the emergence of the pill had significant impacts on family formation and economic outcomes for women. However, despite having *legal* access to the pill, women in regions with religious opposition among health professionals did not experience the same *de facto* access. The results underscore the importance of supply-side moral preferences in nullifying the purported benefits of liberalization of contraceptives.

One counter-example is identified by Bearman and Brückner (2001). The authors examine the evangelical "True Love Waits" movement in the U.S., which encouraged adolescents to take public vows of chastity (virginity pledges). These pledges were almost entirely a religious phenomenon (often done in church rallies) and had gender-differentiated aspects – girls were particularly targeted to pledge chastity as part of a purity culture in evangelical circles. Bearman and Brückner find that teen girls who took the pledge (who were, on average, more religious) delayed sexual intercourse relative to otherwise similar non-pledgers. While they also find some negative side effects (pledgers were less likely to use contraception when they did become sexually active), the study shows how a religiously motivated norm affected sexual behavior and thus potentially fertility (in this case, reducing teen pregnancies among pledgers). Similarly, Masoud *et al.* (2016) conduct a field experiment in Egypt where they exposed some to Quranic verses and religious arguments in favor of women's leadership, while control groups got neutral messages. They found that framing empowerment in Islamic terms increased expressed acceptance of female political leadership, with men being more responsive than women. The finding underscores how reinterpretations of religious scriptures can shift to more progressive gender attitudes among the men.

In addition to refraining from contraceptive use or abortions, another mechanism for higher fertility is through marriage timing and formation. Religiously observant individuals tend to marry earlier and are less likely to cohabit outside marriage, which expands the duration of childbearing within a stable union. In the United States, young adults who attend religious services frequently or for whom faith is very important have substantially higher odds of marrying in their early 20s as opposed to delaying marriage or remaining single (Uecker 2014). Analyzing panel data from the Add Health study, he finds that Mormons and Conservative Protestants are the most likely to marry by their early twenties, followed by mainline Protestants and Catholics, with secular individuals and Jews marrying latest on average. In addition, young couples in those communities may face social pressure to "be fruitful and multiply," or they may internalize pronatalist values from sermons and religious texts (Lehrer 2004). Lehrer (2004) notes that in many U.S. religious subcultures, from conservative Protestant congregations to Latter-day

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Saints (Mormons), those who conform to prescribed family norms (e.g. avoid premarital sex, have a large family) gain status and support within the community. This social reward system lowers the perceived cost of child-rearing for the devout, making large families more attainable. Consistent with this, a study in Britain and France finds that the negative impact of higher education on fertility (often via career opportunity costs) is significantly muted for women who are actively religious (Peri-Rotem, 2020). Highly educated religious women have more children than their equally educated but secular peers, presumably because religious networks and values help them reconcile work and family.

Moving beyond fertility, religiosity potentially influences women's health through other mechanisms. Lowe (2020) shows that during the Welsh Revival of 1904–1905, a sudden surge in male religious fervor led to a measurable decrease in behaviors like drunkenness and violent assault (typically male-dominated vices), thereby improving household well-being for women and children. Using a difference-in-differences approach (comparing trends in revival-affected Wales to those in England), he estimates a 5–12% drop in overall crime, driven by declines in violence and public intoxication. There is an extensive literature on infant health which highlights the fact that infants of religious women can have different health outcomes from those of less-religious women.[3] Yet this literature is beyond the scope of our paper which is focused on gender and religion and not family outcomes more generally.

3.4. Discrimination

Discrimination against Muslim Women in Labor Markets. A large body of experimental and observational research demonstrates that Muslim women – especially those who wear visible religious attire – face significant labor market discrimination. In a correspondence audit study in Germany, Weichselbaumer (2020) sent out matched résumés on behalf of a Turkish-origin female job seeker, randomly varying whether her application photo showed her wearing a headscarf. The results revealed stark disparities in callback rates: the otherwise identical applicant received far fewer interview invitations when depicted with a headscarf, compared not only to her unveiled Turkish-origin counterpart but also to native German women with equal qualifications. Similarly, Ghumman and Ryan (2013) conducted a field experiment in the United States in which young Muslim women applied in person to retail jobs in Midwestern shopping malls, either wearing a hijab or not. In 112 trial applications, the hijab-wearing candidates were substantially less likely to be invited to complete job applications or receive callbacks, and they experienced shorter, colder interactions from store personnel relative to non-hijabi (but otherwise comparable) applicants. These findings align with evidence of more subtle biases in interpersonal treatment: for example, King and Ahmad (2010) find that in U.S. retail settings, women wearing Islamic attire had briefer and less friendly interactions with hiring staff than visibly non-religious applicants, even when formal outcomes (such as application acceptance) were not explicitly different. Importantly, anti-Muslim hiring bias is not confined to single countries; a recent cross-

[3]For instance, Bartkowski *et al.* (2011) show that U.S. counties with an unusually high prevalence of Pentecostal churches have higher infant mortality rates than demographically similar counties. Almond and Mazumder (2011) use the Islamic holy month of Ramadan as a natural experiment to study the impact of religious observance on health and fertility. Almond and Mazumder show that babies who were in utero during Ramadan (when their pregnant mothers likely fasted) have lower birth weights and a higher likelihood of adult disabilities, compared to babies not exposed to Ramadan in utero.

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national audit study covering five European labor markets documented systematically lower callback rates for job candidates who signaled a Muslim background, above and beyond ethnic origin effects (Di Stasio *et al.* 2021). Jacquet and Montpetit (2025) document a positive correlation between discrete-symbol wearing (i.e., religious jewelry) and economic participation among Muslim women, suggesting that Muslim women use such discreet symbols to preserve religious benefits while reducing labor market costs associated with Islamic attire.

Beyond average effects, research has begun to unpack when and why Muslim women encounter discrimination, revealing heterogeneous outcomes based on perceived conformity to gender norms. An innovative experiment by Choi *et al.* (2023) illustrates that bias against Muslim women can hinge on stereotypes about their gender attitudes. The authors conduct a large-scale field experiment in 26 train stations in Germany, observing natives' willingness to engage in casual helping interactions with Muslim immigrant women. In the baseline condition, a woman wearing a hijab would ask a stranger for assistance (e.g. with retrieving dropped items), and the study records whether bystanders helped. Consistent with other work, the hijab-wearing women initially faced significant discrimination: native Germans (especially native women) were less likely to assist them, reflecting a "hijab penalty." However, in a treatment condition the Muslim women signaled progressive gender role beliefs (by revealing her position on women's right to choose to pursue a career over being a housewife in a phone call), this simple signal eliminated the discrimination gap. Native German women became much more willing to interact with and help the hijab-clad women once shared egalitarian values were made salient.

Research also indicates that the gender of the decision-maker or evaluator can mediate the extent of religious discrimination. In certain contexts, men and women exhibit systematically different biases when confronting individuals from another (or no) religion. A recent study by Lavy *et al.* (2022) examines grading outcomes in Israel's high-stakes secondary school exams, where each student's test is graded by external examiners. Although exam scripts are anonymized with respect to student identity, a key institutional detail is that the religious orientation of the student is observable to graders. The authors exploit the essentially random assignment of exam booklets to graders – some of whom are from the religious education sector and others from secular schools – to identify grader bias. The analysis uncovers a clear pattern of in-group favoritism driven by male graders: when an exam is scored by a religious male teacher, religious students receive significantly higher grades than comparable secular students, implying a bias in favor of those sharing the grader's religious background. In contrast, religious female graders do not display any such bias. Intriguingly, this stands in contrast to the pattern in the earlier German field study, where it was native women who engaged in biased behavior against Muslim women (Choi *et al.* 2023).

Religion and the Historical Persecution of Women. History offers examples of how religious ideology has been used to justify the persecution of women – notably in witch hunts – and quantitative research has analyzed these phenomena to uncover underlying drivers. Christian (2019) studies witchcraft trials in early modern Scotland (1563–1727), assembling a panel dataset of local trial incidence alongside economic and climatic variables. In this period, witch trials (overwhelmingly targeting women) were often sanctioned by religious authorities but implemented by secular elites, who had to devote resources to investigations and prosecutions. Christian finds that *favorable* economic shocks led to increases in witch trials. Years of better growing conditions (e.g. higher temperatures boosting agricultural yields) saw a higher number of witchcraft

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accusations and trials. The paper's identification strategy leverages these exogenous weather fluctuations and distinguishes between different types of economic shocks: positive price shocks to export-oriented, taxable goods (which enriched local elites and expanded fiscal capacity) resulted in significantly more witch trials, whereas equivalent shocks to subsistence crops (which improved common livelihoods but not elite revenue) showed no effect on persecutions. Christian interprets these results as showing that when elites had more income and capacity (thanks to booming trade crops), they invested those resources in enforcing religiously framed persecutions. In other words, witch hunts were not purely a reflex of societal panic or superstition; they were enabled by well-funded authorities using religious pretexts to target marginalized women.

Cultural aspects of religiosity also shaped where and to what extent women became victims of religious persecution. Khalil and Panza (2025) examine the incidence of witch trials (as well as anti-Jewish pogroms) across hundreds of European cities from 1100 to 1850, focusing on the role of local religious culture. They introduce a novel measure of gender inclusion in religiosity: whether a city's medieval Christian community established a cult devoted to a female saint (as opposed to only male saints) before the year 1100. This serves as a proxy for a more female-inclusive religious culture. Using city-level panel regressions with controls for geography, economic factors, and overall religiosity, Khalil and Panza find that cities with an early-established cult of any saint were more likely to later persecute minorities, consistent with strong religiosity being linked to intolerance. However, within that group, the presence of a female saint's cult dramatically reduced a city's propensity to engage in witch hunts. Cities that venerated female saints were significantly less likely to prosecute witches than cities whose patron saints were exclusively male. This finding is correlational but robust to many confounders, and the authors discuss mechanisms such as norm diffusion (longer or more locally adapted Christian influence) and greater social integration through inclusive religious festivals.

Religious Discrimination in Public Institutions. Discrimination rooted in religion can also affect the delivery of public services and the behavior of officials. An example comes from the education sector in the United States. Pfaff *et al.* (2021) investigate whether public school principals exhibit bias against religious minority groups in the US. The study deploys a large-scale correspondence experiment, emailing a total of 45,710 school principals with a request from a purported parent to discuss their child's schooling at the school. Crucially, the religion of the fictional parent was randomly varied through subtle cues in the emails (such as varying the author of a quote associated with religious or non-religious identity in the email signature). This design isolates the effect of the parent's religious identity on the likelihood of receiving a reply. The results point to substantial discrimination: principals were markedly less responsive to parents who were implied to be Muslim or atheist compared to otherwise identical parents signaling a mainstream Christian affiliation. The bias against non-Christians was pervasive across genders of principal or parent.

Religious Influence on Attitudes toward Sexual Minorities. Another dimension of religion and discrimination is the treatment of sexual minorities. Ananyev and Poyker (2021) provide causal evidence that exposure to Christian missions during the colonial period has had a long-lasting effect on homophobia in Africa. Using the geo-referenced Afrobarometer data, they show that individuals living in regions closer to historical mission stations (established in the 19th and early 20th centuries) are significantly more likely to express negative attitudes toward homosexuals and to oppose gay rights, compared to those in regions farther away. To establish causality, the authors control for

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pre-colonial cultural acceptance of same-sex relationships. Drawing on anthropological records, they identify which indigenous ethnic groups had more tolerant views of homosexual practices prior to colonial contact. Ananyev and Poyker find no evidence that pre-colonial LGBTQ tolerance predicted missionary location, bolstering the case that the observed differences today are a result of mission influence rather than selection bias. Furthermore, they detect the legacy specifically among Christian populations: the increase in anti-gay attitudes in high-mission regions is driven entirely by respondents who are Christian, whereas attitudes of Muslim or non-religious residents in the same areas do not differ in the same way.

3.5. Religious messaging

Traditionally, conservative religious interpretations have often been seen as entrenching patriarchal gender roles. Yet recent research suggests that the same religious authority and content can, under certain conditions, be leveraged to promote more gender-equitable attitudes and behaviors. Notably, policy interventions that restrict religious expression can have unintended consequences for gender outcomes. For example, Abdelgadir and Fouka (2020) examine France's 2004 public-school headscarf ban as a natural experiment and find a significant backlash effect on young Muslim women's education and integration. Muslim girls who were of school age after the ban experienced lower secondary school completion rates and subsequently lower labor force participation than earlier cohorts, widening gaps with non-Muslims. The authors identify perceived discrimination as a mechanism: the ban strengthened religious identity among Muslim women and led some to disengage from school, undermining the policy's intended integration goals.

Progressive Religious Framing and Gender Attitudes. One line of research tests whether reframing gender-egalitarian ideas in religious terms can change attitudes in conservative societies. In a large survey experiment in Egypt, Masoud *et al.* (2016) randomly assigned roughly 2,346 Egyptians to hear arguments in favor of women's political leadership framed either in secular terms or justified with verses from the Qur'ān and compared them to a control group with no prompt. The results show that a Qur'ān-based, progressive message significantly increased support for female political leaders. Respondents exposed to the Islamic justification for women as heads of state were more accepting of a woman president or prime minister than those who heard an otherwise identical secular argument. The estimated effect was substantial – comparable to the attitudinal difference associated with several additional years of education in the population. Later studies have probed the importance of messenger credibility and content authenticity in such interventions. In post-Arab spring Egypt, an experiment by Hassan and Shalaby (2019) finds that a similar Quranic equality message did not significantly increase the willingness to extend the same political rights to their least-favored political groups, in contrast to Masoud *et al.*'s (2016) findings. The authors argue that the subjects might already be familiar with such religious texts, hence, exposure to the prime did not provide "new information" that prompts a shift in attitudes. This suggests that while scripture-based framing has persuasive power, the content of the messages themselves may need to challenge preconceived ideas in a society for the persuasion to work.

Faith Leaders as Agents of Change in Gender Relations. Another body of work evaluates programs that explicitly enlist religious leaders or institutions to influence gender-related behaviors within households and communities. A salient example is the

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attempt to reduce intimate partner violence (IPV) by changing norms of marital hierarchy. Boyer *et al.* (2022) conduct a randomized controlled trial in Uganda to test a faith-based counseling program called Becoming One. In this intervention, local Christian religious leaders (pastors in western Uganda) led 12 weekly sessions with married or engaged couples, incorporating scripturally grounded messages about equitable gender roles. Leaders were trained to emphasize a more progressive interpretation of Christian doctrine – stressing that husbands and wives should share decision-making and power in the household and that marital violence contradicts religious teachings of love and respect. One year after the program, women in the treatment group reported a 5-percentage point lower prevalence of IPV compared to the control group, a significant reduction equivalent to about a 11.9% drop relative to baseline levels. Treated couples also showed more joint decision-making. Notably, these effects were largest in congregations led by clergy who held more gender-egalitarian views at baseline and who engaged particularly actively with the curriculum.

Sometimes using religious messaging for positive change can result in unintended side effects. For instance, in the study by Bearman and Brückner (2001), we saw that evangelical teens who took a voluntary virginity pledge delayed their sexual debut significantly longer than similar teens who did not pledge. On average, pledgers initiated intercourse about 18 months later than non-pledging peers, indicating a sizable postponement of sexual activity. Moreover, the study found that when pledgers did become sexually active, they were less likely to use contraception than non-pledgers, which could lead to higher risks of unintended pregnancy or STDs among pledge-breakers.

Encouraging healthier gender-related behaviors through faith leaders has also been attempted in the realm of family planning and reproductive health. A recent cluster-randomized trial in Tanzania trained influential local religious leaders (primarily Christian pastors) in a curriculum that combined medical information about contraception with theological affirmations of family planning (Mwakisole *et al.* 2023). These leaders then disseminated faith-compatible family planning messages in their churches and communities. The authors find a significant increase in contraceptive uptake in villages assigned to the intervention. Over the year following the program, the number of new contraceptive adopters at local health facilities was about 19% higher in treatment communities than in control communities, after adjusting for baseline differences.

Religious Framing of Economic and Environmental Decisions. Beyond the domestic sphere, researchers have explored whether religious messaging can influence decisions with economic or environmental dimensions. One area of interest is financial behavior and women's economic empowerment. In conservative Muslim societies, some women shy away from formal financial services due to religious concerns (for instance, that earning interest is haram, or impermissible). Ahmad *et al.* (2023) conduct a field experiment in Pakistan that aimed at increasing financial inclusion among low-income women by offering them a savings account aligned with Islamic principles. The study evaluated three interventions to encourage women microfinance clients to open and use a bank savings account: (1) a religious encouragement in the form of a motivational speech by a staff member quoting the Qur'ān and Hadith about the virtues of saving and clarifying that Islam allows certain formal savings; (2) a subsidy waiving the account opening fee; and (3) hands-on assistance with paperwork. Providing a small subsidy or assistance alone did increase account uptake modestly, but adding the Islamic framing produced a far larger jump in uptake. In the most intensive treatment – combining the

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religious message with fee-waiver and form-filling help – about 60% more women opened accounts than in the control group. By contrast, when offered only the religious speech (without cost reduction or help), women's take-up was not statistically different from the control group, suggesting that practical barriers and trust issues were the primary hurdles, and religious messaging played a catalytic role once those hurdles were lowered.

Another application has been in the environmental domain, where women often play key roles in household resource management. Buccione (2024) examines whether Islamic messaging can spur water conservation behavior among women in Jordan, one of the world's most water-scarce countries. Nearly the entire population is Muslim, and women are typically responsible for managing water use in the home. Buccione implements a randomized field experiment in partnership with the Jordanian Ministry of Islamic Affairs, leveraging the existing network of female religious instructors (wa'izat). These instructors hold regular educational classes for women at local mosques. In the experiment, a set of 19 instructors were randomly assigned to deliver a special religious lesson on water conservation to some of their classes (treatment) while delivering a standard religious lesson on a non-water topic to other classes (control). Crucially, all participants, both treatment and control, also received identical secular information about Jordan's water crisis and practical water-saving tips – isolating the impact of the religious content about water. The religious lesson in the treatment emphasized Quranic teachings on the sanctity of water, portraying water conservation as a core Islamic duty (e.g. citing scripture on avoiding wastefulness, and the Prophet's examples of frugality with water). The experiment found significant changes in both attitudes and observable behaviors. In surveys immediately after, women who received the Islamic water lesson demonstrated stronger pro-conservation attitudes, such as greater agreement that wasting water is morally wrong. More concretely, over the next three months, their household water consumption (measured via water meter bills) dropped by about 17% relative to the control group, a substantial reduction in use. Furthermore, when given a choice of charities to donate an experiment-provided stipend to, treated women were 29% more likely to choose a water conservation charity, and they donated more money on average to that cause, indicating heightened altruism toward alleviating water scarcity. Buccione delves into mechanisms: the religious messaging increased women's belief that water conservation is a religious responsibility – a shift in internalized norms.

3.6. Liberalization and backlash

Reforms that improve women's legal rights or education have been studied in various countries using quasi-experimental approaches. These studies generally find that giving women stronger legal entitlements and education improves their outcomes and bargaining power, though sometimes with evidence of backlash.

Education Reforms and Gender Norms. Expanding women's access to education through compulsory schooling reforms has had notable impacts on gender attitudes and behaviors. In Turkey, a 1997 law extended compulsory schooling from 5 to 8 years, creating a sharp discontinuity by birth cohort that researchers exploit for causal analysis. In a regression discontinuity design in a Demographic and Health Survey sample, Gulesci *et al.* (2020) find that this reform led to an intergenerational attitudinal shift: mothers whose eldest daughters received more schooling due to the reform were 12 percentage points less likely to agree that domestic violence is justifiable. This

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represents a 43% reduction in acceptance of wife-beating and reflects a meaningful change in gender norms in the family. No similar effect was found for mothers of sons, indicating that educating girls (but not necessarily boys) can liberalize parental attitudes on domestic violence.

Related evidence from the same Turkish reform shows downstream effects on women's safety. Akyol and Kırdar (2022) revisit earlier findings on education and IPV. Using data from domestic violence surveys in 2008 and 2014, and the 1997 law and a regression discontinuity design, they find that additional schooling had no significant effect on psychological or financial abuse, but did reduce physical violence against women, especially for those who grew up in rural areas.

Beyond immediate family dynamics, education reforms can also shape women's political and religious orientations. Cesur and Mocan (2018) examine the long-run impacts of Turkey's secular education expansion on women's religiosity and voting. Using an exogenous increase in schooling attainment induced by the same 1997 reform, they show that educated women in urban areas became significantly less likely to identify as religious and less prone to wear Islamic head coverings, and they became more likely to express "modern" attitudes. In addition, women's support for Islamic political parties dropped after gaining more secular education. Notably, these secularizing effects of education are concentrated among women – male religiosity and voting behavior were not significantly altered by the reform. This suggests that expanding girls' education in a secular curriculum can shift cultural and political preferences, potentially weakening the hold of religious-patriarchal norms on women. Similar findings emerge in other contexts: for instance, evidence from Nigeria (Osili & Long, 2008) and India (Breierova & Duflo, 2004) also link female schooling to later marriage and lower fertility, consistent with education fostering women's autonomy.

Legal Reforms: Inheritance and Divorce Rights. In Kenya, a series of legal changes granted women equal inheritance rights over the 1980s and 1990s, replacing discriminatory customary laws. Harari (2019) exploits variation in these reforms across religious groups (since Muslim communities were initially exempt) in a difference-in-differences framework. She finds large gains in human capital and health for women exposed to equal inheritance law. In reform-affected regions, young women attained significantly more education, and correspondingly delayed marriage and childbearing. Women's likelihood of undergoing genital cutting dropped, which Harari interprets as a sign that parents, expecting daughters to inherit assets, no longer felt pressured to enforce this harmful tradition that was unrelated to productive assets. Additionally, women in reformed areas participated more in family decision-making, pointing to increased household bargaining power as a mechanism. Complementary evidence by Roy (2015) shows that the Hindu inheritance reform in some Indian states raised girls' schooling and age at marriage, consistent with improved parental incentives to invest in daughters. However, not all outcomes are positive: Anderson and Genicot (2015) find that in India, extending property rights to women was initially accompanied by a rise in female suicide rates, arguably due to intra-family conflict or backlash when women asserted their new rights in environments still hostile to female ownership. This underscores that legal reforms can provoke resistance in the short run even as they empower women in the long run.

Improving women's divorce rights can likewise alter household power dynamics and well-being. A salient example comes from Egypt, where in 2000 the government introduced the Khul reform allowing women to initiate a no-fault divorce (Khul) unilaterally, provided they forgo financial claims. Corradini and Buccione (2023)

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evaluate this reform's impact on women's welfare using a difference-in-differences strategy. They compare mothers who, at the time of the reform, had only young children (and thus stood to retain child custody if they divorced) to mothers with older children (for whom divorcing meant losing custody under prevailing rules). This design isolates women who could credibly threaten divorce after the law change from those for whom the threat remained costly. The results show that extending unilateral divorce rights to women led to a significant decline in domestic violence. Empowered with an exit option, women faced lower risks of spousal abuse, consistent with improved bargaining position within marriage. The reform also induced greater investments in children's education in affected families, suggesting that as women gained autonomy, household resources shifted toward the next generation's human capital. Interestingly, Corradini and Buccione do not find a clear effect on female labor force participation, indicating that greater autonomy manifested more in the private sphere (less violence, more say in children's upbringing) than in immediate labor market outcomes. This aligns with cross-country evidence that stronger divorce rights for women increase their bargaining power at home (e.g., Stevenson & Wolfers, 2006) and can improve outcomes like children's education, even if women do not leave marriages or join the workforce right away.

Secularization Policies, Veiling Bans, and Backlash. In several settings, states have pursued secularist policies – such as banning Islamic veiling or emphasizing a national secular culture – aimed at modernizing gender norms or reducing religious influence. Multiple studies of these interventions find unintended consequences, including backlash among conservative communities or harm to the intended beneficiaries (religious minority women). We saw examples of this above. For instance, the headscarf ban in French public schools in 2004 (Abdelgadir and Fouka 2020), resulting in Muslim girls receiving less secondary education. The authors trace these effects in part to a psychological mechanism: the ban heightened feelings of discrimination and alienation, which in turn led Muslim youth to strengthen their religious identity even as they also expressed a stronger French national identity. Montpetit (2025) further shows that the prohibition of veiling not just reduced educational attainment of treated Muslim women, but also translates into lower employment in the long-run. The French ban's backfiring accords with theories of "cultural backlash." For instance, Carvalho (2013) develops a model of veiling as a form of cultural resistance: when a community perceives its traditions under assault by secular authorities, its members may double-down on religious expressions. His theory predicts that bans on veiling can be counterproductive – prompting religious individuals to retreat into tighter community networks and ultimately increasing religiosity.

We have seen positive effects of the opposite type of policies. Turkey, officially secular but majority-Muslim, long barred women wearing headscarves from public-sector jobs and universities (a policy dating back to the early 1980s coup). In the 2010s, this ban was gradually lifted. Corekcioglu (2021) examines the lifting of the headscarf ban in municipal government jobs by leveraging a natural experiment in which some towns had Islamist mayors and others secular mayors when the change occurred. Using a difference-in-discontinuities design, she finds that removing the headscarf ban led to a rise in female employment in towns governed by Islamist (pro-religious) mayors. Prior to the reform, Islamist-led municipalities hired significantly fewer women, likely because many religious women could not work unveiled and were thus excluded. In contrast, towns with secular mayors (who were already less inclined to hire veiled women) showed no such jump.

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Socioeconomic Change and Gendered Religious Traditions. Cultural practices and gender norms are not only shaped by laws and formal reforms, they also respond to broader socioeconomic changes. A growing literature in economics examines how economic and political change interacts with religious or traditional norms surrounding gender roles. Socioeconomic change can reinforce gendered religious traditions.

Moukaddem (2025) examines the impact of a major political transformation in Egypt, the Arab Spring uprisings, on Muslim dowers. The deferred dower (mu'akhar al-sadaq) is a deferred debt owned by the husband to his wife which becomes due in events of divorce or the husband's death. Using a difference-in-differences design, she finds that while the amounts of deferred dower promised to Muslim women have been decreasing over time, the downward trend is less pronounced in areas more heavily exposed to deadly protests during the Arab Spring. The study shows that religious institutions, in this case, marital transfers, can become prominent as they are leveraged by religious women as an informal insurance during a period of political change.

While Moukaddem (2025) examines an episode of political change that heightened economic uncertainty among religious women, Shofia (2025) investigates how economic modernization influenced the prevalence of voluntary veiling among Muslim women in Indonesia. Using human-coding of around a quarter million of photographs of women in public high school registers, she shows that an increase in female participation in formal occupations has a positive effect on veiling. She further shows that the veiling only increases when Muslim women engage in formal, paid work where they are typically required to be present at a work site, but not when they engage in informal employment. The findings suggest that as women step away from domestic responsibilities for income-generating activities, they respond by adopting veiling to signal their adherence to social norms to reduce reputational risk (Carvalho, 2013). This is consistent with evidence from Egypt and Kuwait that shows Muslim women veil to gain social acceptance (Al-Kazi & González, 2018).

4. Conclusion

This survey underscores that the intersection of gender and religion, while increasingly studied, remains far from being fully understood and offers substantial scope for further research. In particular, significant gaps persist in geographical and religious coverage. Much of the evidence to date comes from Judeo-Christian or Islamic settings, whereas other faith traditions and regions have received scant attention. For instance, East Asian contexts shaped by Confucian or ancestral worship – with their patrilineal ritual practices – are rarely examined in the economics literature. Similarly, the gender dynamics of Hindu-majority and indigenous societies remain under-researched. Important gender-related outcomes have also been overlooked. One notable example is female religious leadership, which has garnered relatively little scholarly analysis. We know surprisingly little about why only certain denominations permit women in top clergy roles or how women rise in religious hierarchies, despite this being a crucial facet of gender equality within religious institutions.

Methodologically, the existing evidence base is constrained by important limitations. A majority of studies rely on cross-sectional associations or observational data, making it difficult to draw clear causal inferences about religion's impact on gender outcomes. The endogeneity of religious affiliation and participation – i.e. the fact that religiosity is a choice potentially influenced by unobserved factors – poses a severe challenge. As a result, many claimed effects of religion on female education, labor supply, or fertility

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could reflect confounding factors or reverse causality. Although recent research has begun to tackle this issue by leveraging natural experiments and field interventions, such approaches are still the exception. Future research should prioritize causal identification to verify which observed relationships truly reflect the influence of religion, rather than other underlying cultural or economic differences.

Finally, our review highlights several unresolved paradoxes and tensions in the literature. One well-documented puzzle is that women consistently exhibit higher religiosity than men despite many religious doctrines entrenching patriarchal norms. This paradox remains only partially explained by existing theories: no single hypothesis fully accounts for women's greater religious commitment, and large portions of the gender gap persist unexplained after accounting for factors like risk-aversion or social roles. Clarifying why women, who often bear the costs of patriarchal religious restrictions, also tend to be religion's staunchest adherents is an ongoing challenge for social science.

Beyond this, the influence of religion on gender-related outcomes appears far from monolithic, sometimes yielding contradictory findings. In some historical contexts, religious movements promoted female empowerment – for example, Protestant missionaries expanding girls' schooling – whereas in other settings religious conservatism has hindered women's economic and social progress (e.g. Afghanistan). This duality suggests that religion can both reinforce and relax traditional gender roles under different conditions, a nuance that current scholarship does not yet fully resolve. Another open question is how modernization and secularization are reshaping the gender–religion relationship. Emerging evidence indicates that gender gaps in religiosity may be narrowing among younger cohorts in parts of the world, and higher female labor force participation tends to attenuate the gap. Yet even in highly secular, gender-equal societies, women often remain more devout on average. Understanding whether these gaps will close with further social change – or whether deeper psychological or socialization factors will sustain a female religiosity surplus – is an area ripe for future inquiry.

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