



# Using the Qur'ān to Empower Arab Women? Theory and Experimental Evidence From Egypt

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## Abstract

A growing body of scholarship on the political and economic subordination of women in the Muslim world has argued that widespread patriarchal attitudes toward women's roles in public life can be ameliorated by offering progressive reinterpretations of Islamic scriptures. In this article, we explore this hypothesis with a large-scale survey experiment conducted among adult Egyptians in late 2013. In the study, a subset of respondents were exposed to an argument in favor of women's political equality that was grounded in the Qur'ān, Islam's holiest text. We found that this group was significantly more willing to express approval of female political leadership than those exposed to a non-religious argument in favor of women's eligibility for political leadership. A further analysis of conditional treatment effects suggests that the religious justification for female political leadership was more likely to elicit agreement among less educated and less pious respondents, and when delivered by women and targeted at men. Our findings suggest that Islamic discourse, so often used to justify the political exclusion of women, can also be used to help empower them.

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**Introduction**

Can Islam, so often seen as justifying the subordination of women in the Arab world, actually be deployed to empower them? In recent years, a group of scholars and intellectuals have made just such a claim, arguing that a progressive reinterpretation of Islamic scriptures can be used to change the patriarchal values that, in their view, undergird regimes of female disempowerment (Karam, 1997; Moghadam, 2002; Najmabadi, 2000). These thinkers point out that there are resources within Islam's holy texts for just such an interpretation, and argue that framing emancipatory arguments in Islamic terms increases their resonance and legitimacy with the average Muslim. In this article, we explore this hypothesis with a large-scale survey experiment conducted in Egypt in 2013, in which we randomly assigned individuals to hear religious and non-religious arguments regarding the political empowerment of women, and then measured their support for this proposition. Our contribution is twofold: first, to bring empirical evidence to an important debate about the possibility of using Islam to ameliorate the disempowerment of Muslim women, and second, to more fully theorize the individual-level mechanisms by which religious rhetoric can influence the expression of attitudes toward contentious policy issues. As such, this study aims to contribute not only to our understanding of the relationship between Islam and women's empowerment, but also to our understanding of religion's role in politics more broadly.

This article proceeds as follows. In the section entitled "The Vexing Status of Arab Women," we illustrate the scope of the problem of women's disempowerment in the Arab world, particularly in the labor market and the political realm. The section entitled "Islam, Arab Culture, or Economic Structures?" examines the debate regarding the role of religious and cultural values in generating and sustaining this disempowerment. Although new evidence suggests that some of the observed variation is a function of economic factors, claims regarding the independent role played by religion and culture remain persuasive. In the section entitled "Using Religion to Empower Women," we draw on recent scholarship on religion and politics to hypothesize that religious discourse can be used to make inroads against conservative attitudes that are rooted in religion in the first place. We then describe the efforts of "Islamic feminists" to do precisely that. By offering progressive interpretations of Islamic scriptures, such individuals believe that they can expand the space for the emergence of gender egalitarianism. In the section entitled "Experimental Design," we describe an experiment we designed to explore the relative influence of religious and non-religious

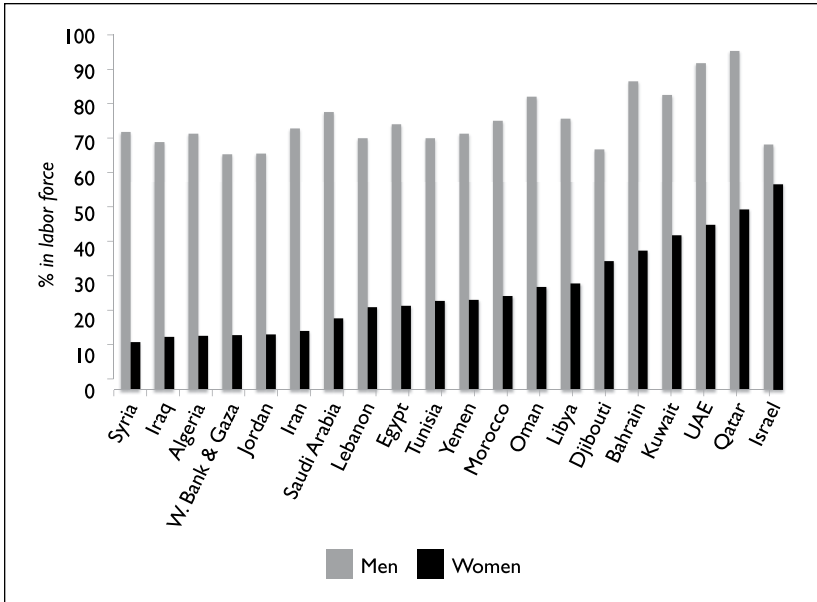
discourse on Muslims' policy preferences, and which provided us with an opportunity to explore the Islamic feminism hypothesis empirically.

We present our findings in the "Results" section. We discover relatively strong support for the Islamic feminist hypothesis. Respondents exposed to a Qur'ānically justified argument in favor of female political leadership were more likely to express acceptance of women in power than were those exposed to an equivalent, non-religious argument, or to no argument at all. After discussing our main findings, we explore whether the effect of the treatment is moderated by key variables that the literature leads us to expect to have an independent effect on gender attitudes, namely, a respondent's gender, degree of religious observance, level of education, and the gender of the deliverer of the experimental treatment. We find suggestive evidence that less religious and less educated individuals were most likely to respond to the treatment, as well as evidence that treatment effects are moderated by respondent and enumerator gender. We conclude by discussing the implications of our study for the empowerment of Muslim women and for the role of religious rhetoric more broadly in political attitude formation and change.

## **The Vexing Status of Arab Women**

Women's disempowerment is a global problem, but scholars have noted that it is particularly egregious in Muslim and Arab countries. As Fish (2002, p. 24) puts it, these countries are "distinct" in that they exhibit an "unusual degree of subordination of women" (see also Donno & Russett, 2004). One of the starkest illustrations of gender inequality in the Arab world is the gap between male and female participation in the labor force (Figure 1). For instance, in Egypt, the largest country in the region, approximately 75% of males over the age of 15 participate in the workforce, whereas just 24% of women do. The gender gap in labor force participation is similarly large in Tunisia, widely recognized as being among the most progressive Arab countries: 71% of men, and only 25% of women participate in the labor force. For comparison's sake, the rates of male and female labor force participation in Israel, the Middle East's only non-Muslim-majority country, are 69% and 58% respectively.

Another illustration of the scope of gender inequality in Arab countries is the relative dearth of women in the halls of political power. Figure 2 displays the share of the lower house of parliament occupied by women in different regions around the world. On average, 18% of the legislative seats in Arab countries are held by women, compared with 41.5% for Nordic countries, 26.5% for the Americas, and 23.7% for non-Nordic members of the Organization for Security and Cooperation in Europe (OSCE). In Kuwait's 65-member legislature, only one seat is occupied by a woman.<sup>1</sup> Lebanon's 128 seat legislature



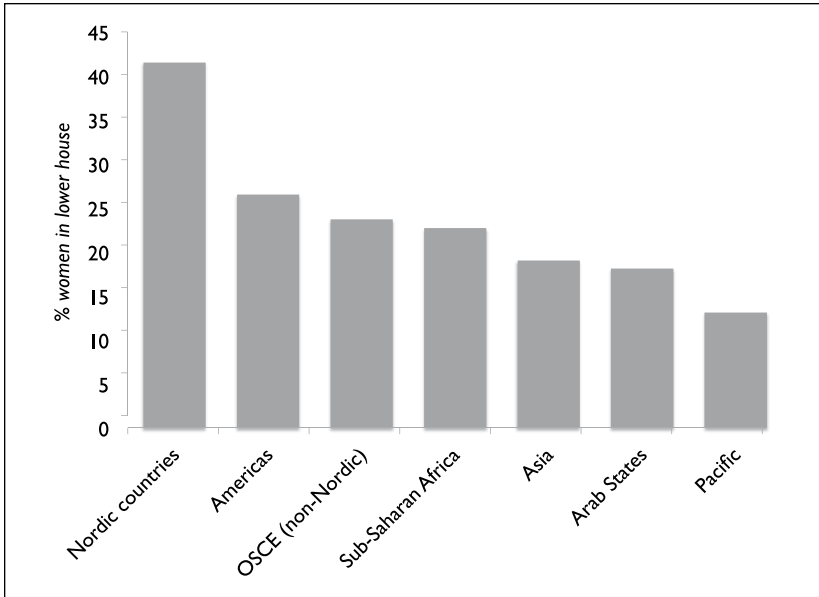
**Figure 1.** Male and female labor force participation in select Arab countries (International Labor Organization estimates, 2013).  
 Source. World Development Indicators (<http://data.worldbank.org/>).

only features four women. More promising are Tunisia and Algeria, where 31% of legislators are women. The comparison is even starker when we examine female membership in just the upper houses of parliament. Here, only 7.3% of the Arab world's legislative seats are held by women, compared with 25.5% in the Americas, 24.3% in the non-Nordic OSCE, 20.3% in sub-Saharan Africa, 13.3% in Asia, and 36% in the nations of the Pacific.

The scholar Mounira Charrad (2009) has rightly cautioned us against viewing Muslim women as victims awaiting rescue from enlightened outsiders (see also Razack, 2005). That said, the impression conveyed by these data is that women in the Arab world have yet to achieve equality in the region's political and economic arenas. Understanding how they might eventually do so requires us to understand why this state of affairs exists in the first place.

### *Islam, Arab Culture, or Economic Structures?*

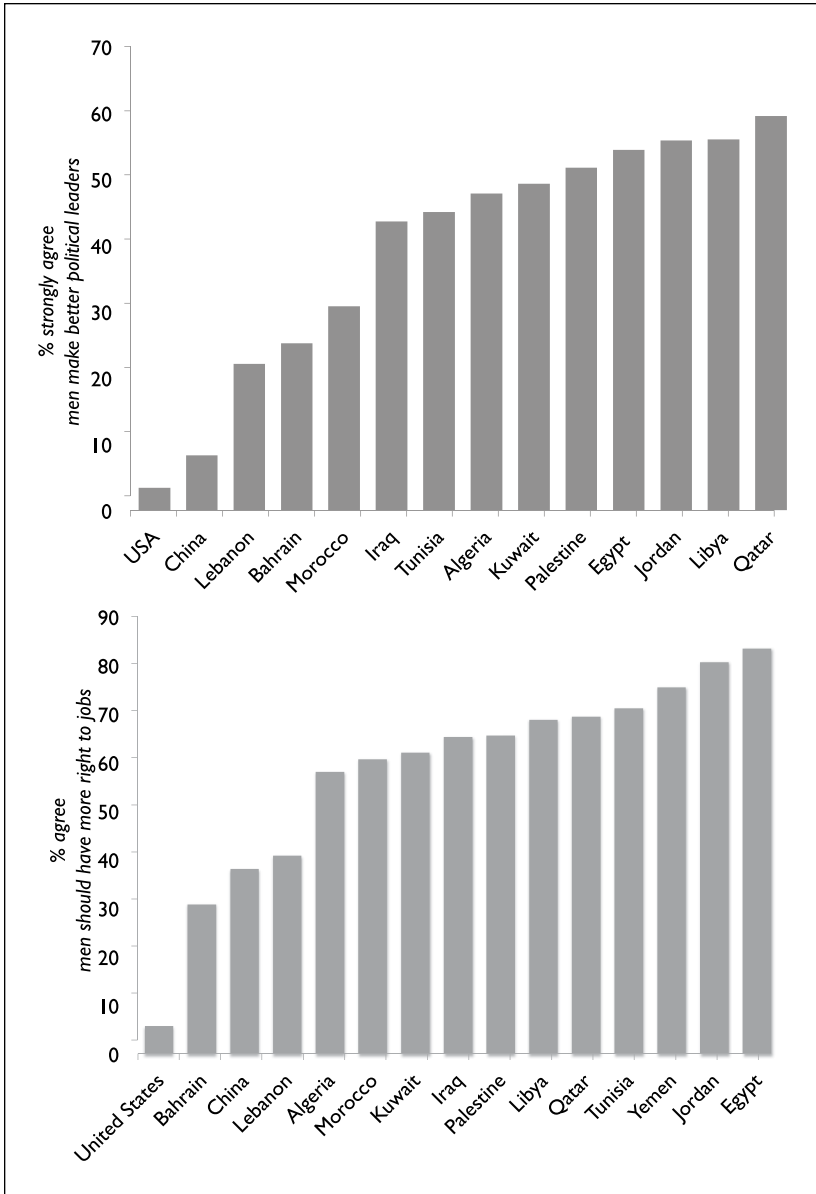
As with any social phenomenon, the relative disempowerment of Arab women likely admits of multiple causes (Shapiro, 2006). But one oft-cited



**Figure 2.** Percentage of women in national parliaments (lower chamber) as of February 2015.

Source: International Parliamentary Union.

culprit is the widespread acceptance and transmission of patriarchal attitudes in Arab and Muslim societies. An illustration of these attitudes can be found in Figure 3, which shows how respondents from Middle Eastern countries in the sixth wave of the World Values Survey compare with those in the United States and China in their responses to two key questions regarding women’s rights. First, the figure shows the percentage of respondents in each country who “strongly agreed” with the proposition “men make better political leaders than women.” Though few American and Chinese respondents placed themselves in this category, absolute majorities of Palestinian, Jordanian, Libyan, Qatari, Egyptian, and Yemeni respondents did. A similar pattern is found when respondents were asked about the importance of gender equality in the economic realm. Second, the figure shows the percentage of respondents who agree with the proposition, “when jobs are scarce, men should have more rights to jobs than women.” Here, absolute majorities of respondents in every Arab country sampled—except for Lebanon and, more surprisingly, Bahrain—signaled assent to the notion that the right to work belongs first to men.



**Figure 3.** Inegalitarian attitudes toward women in Arab countries, the United States, and China.

Source. World Values Survey, Sixth Wave.

Where do these values come from? For some scholars, the problem lies in Islam. For instance, the historian David Landes (1999, p. 411) declared that Muslim society “accords women an inferior place, and this is clearly related to attitudes cultivated in Islam and especially in the Islam of the Arab world.” Most interpretations of Islamic jurisprudence, for example, allocate to women only half of the inheritance shares of similarly situated men (Kabeer, 1999), and in courts of law, the testimony of a woman is weighted less than that of a man (Fadel, 1997). An oft-cited scriptural illustration of Islam’s allegedly inherent patriarchy is verse 34 of chapter 4—titled *al-Nisā*<sup>3</sup> (The Women)—which ostensibly declares men to be superior to women and which is even interpreted by some to give husbands the right to apply corporal punishment to unruly wives.

Specialists of the region have been careful to note that it is less Islamic doctrine than a particular interpretation of Islam that contributes to women’s relative disempowerment (Badran, 1996, p. 125; Blaydes & Linzer, 2008). The Moroccan scholar Fatima Mernissi (1987, p. 19) notes that “paradoxically . . . Islam does not advance the thesis of women’s inherent inferiority. Quite the contrary, it affirms the potential equality between the sexes.” Others note that, while no Arab country has ever had a female head of government or head of state, several non-Arab Muslim countries—Indonesia, Pakistan, Turkey, and Bangladesh—have. Analyzing responses to the World Values Survey, Rizzo, Abdel-Latif, and Meyer (2007) show that non-Arab Muslims are more egalitarian with respect to women’s rights than their Arab counterparts, which they interpret to mean that the patriarchy of Arab countries must be attributable to something other than the Islamic faith.

These differences between Arab and non-Arab Muslims naturally lead many researchers to identify Arab cultural mores as the main determinant of women’s subordination. For instance, the Egyptian feminist activist Nawal El Saadawi (2007) has controversially argued that gender relations in the Arab world are primarily governed by the desire of Arab males to control female sexuality, which they ostensibly see as dangerous to the social order (see also Ahmed, 1989). Suad Joseph (1996, p. 195) notes that in Arab societies, “females are generally taught to respect and defer to their fathers, brothers, grandparents, uncles, and, at times, male cousins.” Hisham Sharabi (1988, p. 7) has argued that Arab society is characterized by the “dominance of the Father (patriarch), the center around which the national as well as natural family are organized.” This, he argues, “provides the ground for a dual domination—of the father over the family household, and of the male over the female” (Sharabi, 1988, p. 32). Olmsted (2005) shows that these values are evolving over time, although Read (2003) notes that they are nonetheless sticky, persisting even in Arab immigrant communities in the West.

Scholars of Arab and Muslim societies have long realized the perils of attributing contemporary social practices to “enduring” religious or cultural values (al-Azm, 1997; Anderson, 1995; Said, 1978). Consequently, an alternative strand of scholarship has shifted the focus away from religion and culture and toward economic structural factors that are hypothesized to contribute to women’s diminished status (Barakat, 1993, p. 105). Michael Ross (2008) has offered the most compelling economic explanation of women’s subordination in the Arab world, arguing that it is not a function of religion or culture, but rather a result of oil wealth. In his account, reliance on oil rents contributes to women’s disempowerment by depressing the export-oriented manufacturing sector, which tends to be the sector that typically employs the most women. This, coupled with government transfers that increase the reservation wage of female homemakers, results in an absence of women in the economic and public spheres.

However, such attempts to absolve religion and culture of responsibility for Arab and Muslim female disempowerment are ultimately not decisive. For instance, the mechanism outlined by Ross assumes an occupational segregation between men and women that is itself likely to be endogenous to patriarchal cultural norms. Moreover, although the subordination of women is a phenomenon we observe throughout the Arab world, Ross’ account applies only to those with significant oil wealth, leaving unexplained the subordination of women in the non-hydrocarbon-based economies of the Arab region. More broadly, in their definitive study of the individual-level determinants of gender attitudes, Norris and Inglehart (2003, p. 49) argue that “an Islamic religious heritage is one of the most powerful barriers to the rising tide of gender equality,” even when controlling for potentially confounding individual-level socio-economic factors. Alexander and Welzel (2011) maintain this correlation between Islam and patriarchal attitudes is robust even to the inclusion of factors such as a country’s per capita reliance on oil rents. Thus, the weight of the evidence suggests that, although gender inequality is a complex phenomenon with multiple causes, religiously inflected values are an important part of the equation.

## **Using Religion to Empower Women**

If Islam plays a role in shaping regimes of gender discrimination, can it also play a role in ameliorating them? Experimental research in American and comparative contexts has affirmed the ability of religious discourse to shape voters’ perceptions of policies and political candidates (Campbell, Green, & Layman, 2011; McClendon & Riedl, 2014; Weber & Thornton, 2012). For instance, in a recent study conducted in the United States, Adkins, Layman,



Campbell, and Green (2013) found that respondents in a survey experiment were more likely to support government assistance for African Americans when told that Catholic clergy also supported it. More broadly, they found that religious cues were particularly important for shaping voters' attitudes on "cultural" issues that are often shaped by religious beliefs in the first place.

Although no experimental research has yet explored whether Islamic discourse can be used to change the expression of religiously inflected, conservative views, there are strong reasons to believe that it can, particularly in the domain of women's rights. For, although Islam has generally been thought to be antithetical to women's empowerment, a new generation of Muslim activists and intellectuals have argued that patriarchal values and practices can be mitigated by convincing other Muslims that Islam actually mandates equality between the sexes. Leila Ahmed (1992, p. 245) has argued that Islamic texts are "open to reinterpretation and change" in ways that might rectify the oppression of women in Muslim societies. Barlas (2009, p. 20) contends that the Qur'an is "the only Scripture to address women as women," and that the Qur'an's repeated use of the feminine pronoun signals an early Islamic commitment to gender equality before God. In a similar vein, others argue that the oft-cited Qur'anic verse that ostensibly declares men superior to women and grants husbands permission to beat their wives has in fact been persistently misread (Scott, 2009; Wadud, 1999).

Such progressive reinterpretations of Islamic scripture are thought to endow gender activists with the resources necessary to combat patriarchal interpretations of Islam. Indeed, many of these activists believe that "a feminism that does not justify itself within Islam is bound to be rejected by the rest of society, and is therefore self-defeating" (Karam, 1997, p. 11). The assumption here is that such activists are more likely to gain the agreement of their fellow citizens and the compliance of the authorities when they use Islam instead of arguing against it.

There are examples from several Muslim-majority countries of the deployment of this "Islamic feminist" strategy in real-world political struggles. For instance, Moghadam (2002, p. 1152) describes how Iranian activists were able to use female-friendly precepts drawn from within the Qur'an to influence state policy on family and divorce law (see also Najmabadi, 2000). In Egypt, Karam (1997, pp. 11-12) reports that Islamists who sought to dismantle the female section of Egypt's Union of Arab Lawyers were beaten back by women who "answered their claims to speak in the name of Islam by proving to them that Islam gave women the same rights they were attempting to abolish." González (2013) documents how Kuwaiti activists have appealed to Islamic precepts to resist laws with regressive effects on women. And in

the United Kingdom, Brown (2006, p. 424) describes how some British Muslim women believe that reinterpreting Islamic texts to promote female empowerment “serves as the most successful strategy for legitimately initiating changes in behaviour and belief in their own communities with minimal resistance.”

The causal logic underlying the Islamic feminist position is straightforward: Individuals who hold traditional attitudes shaped by religious teachings are more likely to update those attitudes if the alternative, progressive position is demonstrated to have equal religious validity. In other words, it is precisely those policy arenas in which religion has been a regressive force that religious discourse is hypothesized to be most effective in promoting the adoption or expression of progressive attitudes.

In this article, we conduct what we believe to be the first experimental exploration of this proposition. Our laboratory is Egypt, the world’s largest Arab country, and a place where the issue of women’s public role is particularly salient (Mahmood, 2005). Indeed, as the scholar Diane Singerman (1995, p. 109) has written in her study of life and politics in Cairo’s poorer quarters, “It could be argued that the issues of sexuality and gender relations, right or wrong, are as sensitive to the sha‘b [people] as national security is to the state.” Can an Islamic discourse be used to change how Egyptians think of women—or, at the very least, the opinions they are willing to express about women? Is religious discourse superior to other forms of discourse when it comes to challenging traditional, religiously inspired views? These are the empirical questions our study seeks to answer.

## **Experimental Design**

The goal of this article is to determine whether scripturally based arguments in favor of the empowerment of women can render Muslims more likely to express progressive attitudes. We do this by analyzing the results of a large-scale survey experiment we conducted in Egypt in late 2013.<sup>2</sup> The experiment, which we describe below, was initially designed to test the relative influence of religious and non-religious arguments on Muslim’s evaluations of different types of policies, of which female political leadership was only one. Although the experiment was deployed with a broad purpose in mind, it is particularly suited to probing the more limited question posed here: Does Islamic discourse have an advantage when it comes to promoting female empowerment?

This study joins a long line of survey experiments that show how subtle shifts in framing or the presentation of new knowledge can change citizens’ stated attitudes and preferences on important policy issues (Gaines, Kuklinski, & Quirk, 2007; Gilens, 2002; Mutz, 2011). That said, we note three

limitations of our experimental approach. The first is that we cannot know whether attitudinal changes observed in the course of a survey experiment carry over into the outside world or are temporally durable (Barabas & Jerit, 2010). However, we believe that this methodology—combining a nationally representative sample and an experimental environment that is in some ways closer to the “real world” than is possible to achieve in a lab—offers one of the best available means of testing causal propositions regarding the factors likely to produce changes in the adoption or expression of particular attitudes (Mutz, 2011). Of course, we fully assume that the discursive strategies we test here would have to be applied repeatedly over time to make any observed attitudinal changes stick, but survey experiments provide a means of identifying which strategies are likely to be effective in the first place.

The second potential shortcoming in our approach is that attitudinal differences we observe between treated and non-treated respondents may not reflect shifts in underlying beliefs, but instead reflect treatment-induced differences in the costs of expressing already extant, latent attitudes. In other words, a treatment may not so much change respondents’ views as allows them to express views they already had. This is particularly true if the view is one that is not shared by many people or which may expose the holder to social opprobrium. We have no way of distinguishing these two outcomes. However, even if treatments are only creating space for the expression of support for female leadership, we believe this a worthy (and difficult-to-achieve) goal in its own right. A third, and related, limitation of studies such as ours is the tendency of survey respondents to say what they think enumerators want to hear. This last challenge is tractable, however, and below we describe the steps we have taken to overcome it.

In the following sections, we describe the study’s dependent variable, the treatments we designed to affect respondents’ scores on this variable, and the safeguards that our experimental design offers against different potential sources of bias that generally affect survey experiments of the type undertaken here.

### *Outcome Variable*

After responding to a set of behavioral and attitudinal questions, respondents were asked a simple, binary question:

Between the following two opinions, which one is closer to your personal opinion?

- a. It is not good for a woman to assume a position of authority, such as the presidency of the republic or the prime ministership, or

- b. There is no problem if a woman assumes a position of authority, such as the presidency of the republic or the prime ministership.

Responses to this question constitute our dependent variable. We analyze the issue of female executive leadership, as opposed to female labor force participation or some other indicator of female empowerment, due to its political salience. The issue of whether a woman can serve in the presidency is a perennial topic of debate in Egypt. In 2007, the Mufti of Egypt, ‘Alī Jum‘a, issued a *fatwā* declaring that it was forbidden for a woman to assume the presidency, because “one of the authorities of the president is leading the Muslims in prayer and this belongs to men only.”<sup>3</sup> In 2005, the rector of al-Azhar, Egypt’s principal seat of Islamic learning, said women could present themselves as presidential candidates, but noted that “the majority of jurists believe it is unacceptable for a woman to serve as president of the state.”<sup>4</sup> As we shall see, this remains an issue on which the majority of Egyptians hold a traditional, patriarchal viewpoint.

### *Treatments and Controls*

The experimental treatments came in the form of different preambles that immediately preceded the question on female leadership, and to which respondents were randomly assigned. These preambles contained alternative arguments pertaining to the acceptability of a female president or prime minister. Respondents in the key treatment group (for the purposes of this article) heard a religiously justified argument in favor of women’s leadership: that is, before being asked what they thought of a woman becoming president or prime minister, they were treated to an argument that female leadership was in fact supported by a passage of scripture that explicitly acknowledges the equality of men and women.<sup>5</sup> The passage we use is drawn from the 71st verse (*‘āya*) of the Qur’ān’s ninth chapter (*sūra*), titled “Atonement” (*al-Tawba*), which declares that

believing men and believing women are protectors of one another. They enjoy what is right and forbid what is wrong and establish prayer and give charity and obey Allah and His Messenger. On them will Allah pour his mercy. Indeed, Allah is Exalted in Might and Wise.

This verse is often employed by those who wish to argue that Islam makes no distinction between men and women. For instance, in a 2001 essay published in the Egyptian daily *al-Ahrām*, the Egyptian feminist writer Iqbāl Baraka cites the verse as evidence that “the woman in Islam is a completely qualified,

mature citizen with the right to engage in cultural, social, and political activities.” In a 2012 essay in the same venue, the Egyptian legal scholar Fawziyya ‘Abd al-Sattār also cited the verse—which “mandates [gender] equality in religious duties”—to argue that Islam “lifted women out of the pitfalls to which history had consigned her” and “put her on equal footing with men.”<sup>6</sup> We see yet another deployment of the verse in a *fatwā* on the religious site Islamweb.com. The ruling was issued in response to a challenge from a woman describing herself as “a new Muslim from America.” She had recently come across a saying of the Prophet that allegedly “compared the woman to a dog or a donkey.” Dismayed, she wrote that “if this is the way that Islam looks at women, then I wish to leave this religion. Please help me.” The *fatwā* denied that Islam views women in this manner, and invoked the verse as evidence that “the Qur’ān teaches us that women are equal to men in many arenas [ . . . ]”<sup>7</sup> In short, the 71st verse of *Sūrat al-Tawba* is precisely the kind of scriptural resource that Islamic feminists draw upon to demonstrate that female equality is not just compatible with Islam, but integral to it.

We incorporated this verse into our “Islamic feminist” treatment as follows:

Some say that there is no problem if a woman assumes a position of authority, such as the presidency of the republic or the prime ministership. And they rely on a verse from *Sūrat al-Tawba* (Chapter of Atonement) in the Holy Qur’ān that says, “Believing men and believing women are protectors of one another.” And they interpret it to mean that God does not distinguish between men and women in their capabilities.

To determine the effect of this treatment, we measure responses in this treatment group against those in two comparison groups. The first comparison group was a standard, non-treatment control. In this condition, respondents were simply asked what they thought of a woman president or prime minister, without being exposed to an argument for or against the proposition. In the second comparison group, respondents were treated to a non-religious argument in favor of the acceptability of female leadership. This group might be thought of as constituting an “active” control. In the medical sciences, an active control trial is one in which a new treatment is tested against the already extant standard of care—that is, against something that we already know is effective (Chi, Chen, Rothmann, & Li, 2003; Hasselblad & Kong, 2001; Temple & Ellenberg, 2000). In other words, an active control minimizes the potential advantage of the treatment.

Unfortunately, the literature on discursive strategies toward women’s empowerment in the Arab world is not developed enough to have generated

the equivalent of a “standard of care” treatment, so it is important to note that the experimental condition that constitutes our active control in this analysis was not one that had previously been subject to a rigorous experimental test. However, it was more than a placebo, for which we would have had no *a priori* expectation of effectiveness. Subjects assigned to this condition heard an argument in favor of a woman assuming the presidency or prime ministership that was rooted in scientific, expert assessments of female leadership ability. The specific form of this condition mirrored that of the Islamic feminist treatment, except instead of mentioning a Qur’ānic verse, it mentioned a scientific study:

Some say that there is no problem if a woman assumes a position of authority, such as the presidency of the republic or the prime ministership. And they rely on the results of numerous scientific studies. For example, in 2010, a group of leading scholars completed a study that showed that women and men have the same leadership capabilities.<sup>8</sup>

We have good reason to believe that a respondent exposed to this “scientific” argument for women’s empowerment will be more likely to support female leadership than one who receives no treatment whatsoever. Numerous scholars have attested to the importance of scholarly authority in Arab society. For instance, in a study of Middle Eastern patients in health care settings, Hilliard, Ernst, Gray, Saeed, and Cortina (2012, p. 888) find a “cultural deference to experts” that can increase compliance with prescribed treatment regimens. In the political realm, Mitchell (2002) describes how Egyptian autocrats in the 19th and 20th centuries relied on popular and elite deference to expertise to justify modernization schemes. Similarly, Ayubi (1991, p. 19) explains that “seeking advice from men of knowledge [ . . . ] imparts a certain degree of legitimacy” to the decisions of Arab autocrats in the eyes of citizens. We do not wish to overstate the effect that we expect the “active control” to have, only to illustrate that it constitutes a higher benchmark against which to measure our treatment than either a simple non-treatment control or a placebo.

### *Minimizing Bias*

A paramount concern in evaluating survey experiments is ruling out the effects of two sources of potential bias. The first is what is called acquiescence bias, defined as the tendency of respondents to signal agreement with propositions put to them by survey researchers (Hurd & Kapteyn, 2000; Wright, 1975). By measuring the effects of treatments against non-religious arguments in favor of the same position, we are able to minimize concern

over this source of bias. The second source of bias is social desirability bias, defined as the propensity of survey respondents to provide answers that they deem socially acceptable or that will paint them in a positive light (Karp & Brockington, 2005; Nederhof, 1985; Podsakoff, MacKenzie, & Podsakoff, 2012). If, for instance, subjects in the key treatment group—that is, who were exposed to the Qur’ānic argument in favor of female leadership—actually appear more supportive of this proposition, we would not be able to rule out the possibility that the effect was simply due to respondents’ fear of being seen by survey enumerators to be contradicting Islam’s holiest text.

Our experimental design allows us to deal with potential social desirability bias in two ways. First, the experiment included an experimental condition in which respondents were given a Qur’ānically justified argument *against* the empowerment of women. If we find that the respondents are influenced by Qur’ānic arguments both *for* and *against* female leadership, this would constitute evidence in favor of the existence of social desirability bias. The text of this treatment read,

Some people say it is not good for a woman to assume a position such as the presidency of the republic or the prime ministership. And they rely on a verse from Sūrat al-Nisā’ (The Chapter of Women) in the Holy Qur’ān that says, “Men are the protectors and maintainers of women.” And they interpret it to mean that God gave men more capabilities than women.

We compare the effect, if any, of this treatment both against the non-treatment control, and against an active control (in this case, a scientific argument against female leadership).<sup>9</sup> Although the inclusion of a Qur’ānic treatment in the opposite direction to our main treatment will help to rule out bias due to social desirability, we note that it is not water-tight. Even if we do not find an effect for respondents exposed to a Qur’ānic argument against female leadership, it may be less because of the absence of social desirability bias than because respondents have already converged on a patriarchal position. After all, it is hard to move more people toward what is already a consensus position. This “ceiling effect” (Hessling, Traxel, & Schmidt, 2004) is in part an artifact of the design of the survey, which presents respondents with a binary choice rather than a scale that might have allowed us to discern finer variations in levels of support for women’s empowerment.

However, the survey provides additional resources for ruling out social desirability bias. Specifically, it includes experimental conditions in which respondents were treated with religious arguments for policy positions orthogonal to the domain of women’s rights. The inclusion of these treatments further allows us to explore potential social desirability bias: If respondents were influenced by

Qur'ānic arguments in favor of women's empowerment, but also by Qur'ānic arguments in unrelated policy realms, this would suggest that social desirability bias accounts for the observed effects. In contrast, if we find that Qur'ānic arguments influence people in favor of women's empowerment, but not in this alternative domain, this increases our confidence that the effect of our Islamic feminist treatment is not simply a function of the tendency of respondents to signal agreement with whatever the enumerator says the Qur'ān endorses.

The additional policy domain that serves as our social desirability bias test is the realm of wage policy. Our prior assumption, consistent with previous experimental research (Adkins et al., 2013, p. 239), is that religious arguments will be less influential in this worldly domain than they are in the "cultural" domain of women's eligibility to lead the political community. After all, the role and status of women receives far more attention in the exertions of Islamic scholars than how (and whether) governments should set wages.<sup>10</sup> A rough illustration of this fact is provided by a simple analysis of a database of Arabic-language religious rulings (*fatāwā*, sing. *fatwā*) made by Muslim clerics, and maintained by the popular Islamic website IslamWay.net (Bunt, 2009, p. 91; Nielsen, 2013, p. 98).<sup>11</sup> A search for rulings containing the word *al-mar'a* (women) turns up 4,169 entries, a search for *jins* (sex) turns up 1,140 entries, and a search for *al-ḥijāb* (veiling for women) turns up 509. In the realm of wages, a search for rulings containing the word *al-ujūr* (wages) turns up 112 entries, *rawātib* (salaries) turns up 181 entries, and *al-ḍarā'ib* (taxes) turns up only 34.

The relative dearth of rulings on matters pertaining to wages compared to those on sex and gender suggests that wage policy is a useful domain for discerning whether responses to our main treatment on female empowerment could be attributed to some tendency of Egyptians to blindly assent to whatever they are told is in line with God's book. Specifically, we asked respondents their opinion on a proposed ceiling on wages that was then being discussed in the Egyptian news media.<sup>12</sup> In fact, shortly after this survey was completed, the Egyptian government passed into law a regulation capping the wages of government workers at LE42,000 (\$6,000) per month.<sup>13</sup> The question about the wage ceiling was worded similarly to the question on female leadership:

Between the following two opinions, which one is closer to your personal opinion?

- a. It is not good for the government to impose an upper limit on wages, or
- b. It is better for the government to impose an upper limit on wages.

Prior to being asked this question, respondents were assigned to one of five groups. Two of these were treatment groups: Some were given a Qur'ānic



argument in favor of a wage ceiling, and others were treated with a Qur'ānic argument against the wage ceiling.<sup>14</sup> If we find that these arguments influence respondents' evaluations of the proposed policy, this would decrease our confidence in the absence of social desirability bias with respect to our main treatment on female leadership. As with our Islamic feminist experiment, respondents not assigned to one of the Qur'ānic treatments on wage policy were assigned to one of three control groups: a non-treatment control and two active control groups. The active controls matched the two Qur'ānic treatments, exposing respondents to non-religious arguments for or against the wage ceiling rooted in references to scientific expertise.<sup>15</sup>

This experimental setup leaves us with 10 potential treatment groups (4 treatments, 4 active controls, and 2 non-treatment controls). To maintain sufficient power for statistical inference, each respondent was asked both the question on women's empowerment question, and the question on wage policy.<sup>16</sup> For instance, if a respondent was given a Qur'ānic argument in favor of having women in leadership positions, she was also given a Qur'ānic argument in favor of the wage ceiling. Similarly, other respondents received a Qur'ānic argument against female empowerment and a Qur'ānic argument against the wage cap. Table 1 contains a description of each treatment and its purpose in this article's analysis. What this experimental setup lacks in simplicity it makes up for in the ability to detect and potentially rule out one important source of bias in attitudinal surveys.

## Results

The purpose of this study is to determine whether Islamic discourse can be used to ameliorate opposition to female political leadership. If the arguments of Islamic feminists are correct, then we should observe that experimental subjects who were exposed to a Qur'ānic justification for female leadership should be more likely than respondents in the control groups—non-treatment or active—to endorse female leadership. However, if this is due to acquiescence bias, we should find that our treatment effects are only significant when compared against the baseline provided by the non-treatment control (as the active control also includes a positive argument for female leadership). And if the effect we observe is due to social desirability bias, we should find that respondents “agree” with the Qur'ānic arguments regardless of their direction or the domain in which they are applied. We outline these expectations in Table 2.

Did a progressive reinterpretation of a Qur'ānic verse increase Egyptians' expressed acceptance of the principle of female governmental

**Table 1.** Treatment Groups.

| Treatment | Description   | Purpose for this article            |
|-----------|---|-------------------------------------|
| 1a        | Qur'anic argument in favor of female leadership (Islamic feminist)      | Key treatment                       |
| 1b        | Qur'anic argument in favor of wage ceiling (Islamic egalitarian)        | Ruling out social desirability bias |
| 2a        | Non-religious argument in favor of female leadership (secular feminist) | Active control for 1a               |
| 2b        | Non-religious argument in favor of wage ceiling (secular egalitarian)   | Active control for 1b               |
| 3a        | Qur'anic argument against female leadership (Islamic patriarchal)       | Ruling out social desirability bias |
| 3b        | Qur'anic argument against wage ceiling (Islamic inegalitarian)          | Ruling out social desirability bias |
| 4a        | Non-religious argument against female leadership (secular patriarchal)  | Active control for 3a               |
| 4b        | Non-religious argument against wage ceiling (secular inegalitarian)     | Active control for 3b               |
| 5a        | None (no argument prior to question on female leadership)               | Non-treatment control for 1a and 3a |
| 5b        | None (no argument prior to question on wage ceiling)                    | Non-treatment control for 1b and 3b |

leadership? To answer this question, we calculate the average treatment effect, which is the difference in average responses to our key question between treatment and the relevant control group. Following Grimmer, Messing, and Westwood (2013, pp. 4-6), we express the average treatment effect as follows:

$$\delta(T) = E[Y(T) - Y(C)],$$

where  $Y(T)$  is the average value of our dependent variable in the treatment group, and  $Y(C)$  is the average value of the dependent variable in the control group. Since we have two control groups, we have two values for  $Y(C)$ :  $Y(C_{non-treatment})$  connotes the average value of the dependent variable in the non-treatment control, and  $Y(C_{active})$  connotes the value of the dependent variable in the active control. Consequently, we calculate two treatment effects:  $\delta(T_{non-treatment})$  is calculated as the difference between  $Y(T)$  and  $Y(C_{non-treatment})$ , and  $\delta(T_{active})$  is calculated as the difference between  $Y(T)$  and  $Y(C_{active})$ .

**Table 2.** Expected Treatment Effects Conditional on Hypotheses.

| Hypothesis  | Treatment             | Dependent variable             | Expected effect               |                        |
|---|-----------------------|--------------------------------|-------------------------------|------------------------|
|   |                       |                                | Against non-treatment control | Against active control |
| Qur'ānic arguments in favor of female empowerment mitigate widely held patriarchal values           | Islamic feminist      | Support for women's leadership | +                             | +                      |
|   | Islamic patriarchal   |                                | /                             | /                      |
|   | Islamic egalitarian   | Support for wage ceiling       | /                             | /                      |
|   | Islamic inegalitarian |                                | /                             | /                      |
| Acquiescence bias (respondents agree with any position given to them by enumerator)                 | Islamic feminist      | Support for women's leadership | +                             | /                      |
|   | Islamic patriarchal   |                                | -                             | /                      |
|   | Islamic egalitarian   | Support for wage ceiling       | +                             | /                      |
|   | Islamic inegalitarian |                                | -                             | /                      |
| Social desirability bias (respondents agree with any Qur'ānic position given to them by enumerator) | Islamic feminist      | Support for women's leadership | +                             | +                      |
|   | Islamic patriarchal   |                                | -                             | -                      |
|   | Islamic egalitarian   | Support for wage ceiling       | +                             | +                      |
|   | Islamic inegalitarian |                                | -                             | -                      |

+ = positive effect; / = no effect; - = negative effect.

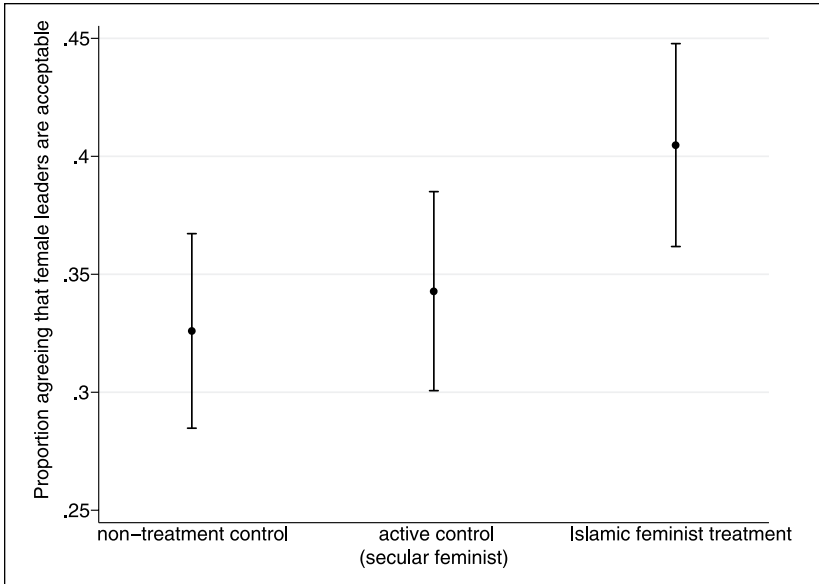
Table 3 lays out the results of our experiment. In column 1 is the description of the treatment (as well as the number used to denote the treatment in the first column of Table 1). Column 2 ( $Y(C_{non-treatment})$ ) is the baseline response in the non-treatment control group. Column 3 ( $C_{active}$ ) denotes the relevant active control from Table 1. Column 4 ( $Y(C_{active})$ ) is the average response pattern in the active control group in column 3. The remaining columns contain information on the effect of the treatments: Column 5 (labeled  $Y(T)$ ) is the average response in the treatment group, and columns 6 and 7 are the treatment effects (i.e., differences in means) relative to the non-treatment and active controls, respectively.

Table 3. Average Treatment Effects.

| Treatment  | $Y(C_{\text{non-treatment}})$                                     |      | $C_{\text{active}}$ | $Y(C_{\text{active}})$  |      | $Y(T)$   | $\delta(T_{\text{non-treatment}})$   | $\delta(T_{\text{active}})$   |
|--|---|------|---------------------|---|------|--|--------------------------------------|-------------------------------|
|  | % respondents approving female leadership (non-treatment control) | 32.6 | 2a                  | % respondents approving of female leadership (active control) | 34.3 | % respondents approving of female leadership (treatment) | Difference vs. non-treatment control | Difference vs. active control |
| Islamic feminist: Qur'anic argument in favor of female leadership (Treatment 1a) | 32.6  |      | 4a                  | 34.9  |      | 36.2   | 3.6 (3.0)                            | 2.3 (3.0)                     |
| Islamic patriarchal: Qur'anic argument against female leadership (Treatment 3a)  |   |      |                     |   |      |  | 7.88*** (3.0)                        | 6.2** (3.1)                   |
| Social desirability bias checks  | % respondents approving wage cap (non-treatment control)          | 72.8 | 2b                  | % respondents approving wage cap (active control)             | 70   | % respondents approving wage cap (treatment)             | 1.0 (2.8)                            | 3.8 (2.6)                     |
| Islamic egalitarian: Qur'anic argument in favor of wage ceiling (Treatment 1b)   | 72.8  |      | 4b                  | 74.7  |      | 75.3   | 2.5 (2.8)                            | 0.5 (2.7)                     |
| Islamic inequalitarian: Qur'anic argument against wage ceiling (Treatment 3b)    |   |      |                     |   |      |  |                                      |                               |

Standard errors for treatment effects, expressed as percentage points, in parentheses.

\* $p < .1$ . \*\* $p < .05$ . \*\*\* $p < .01$  (two-tailed t test).

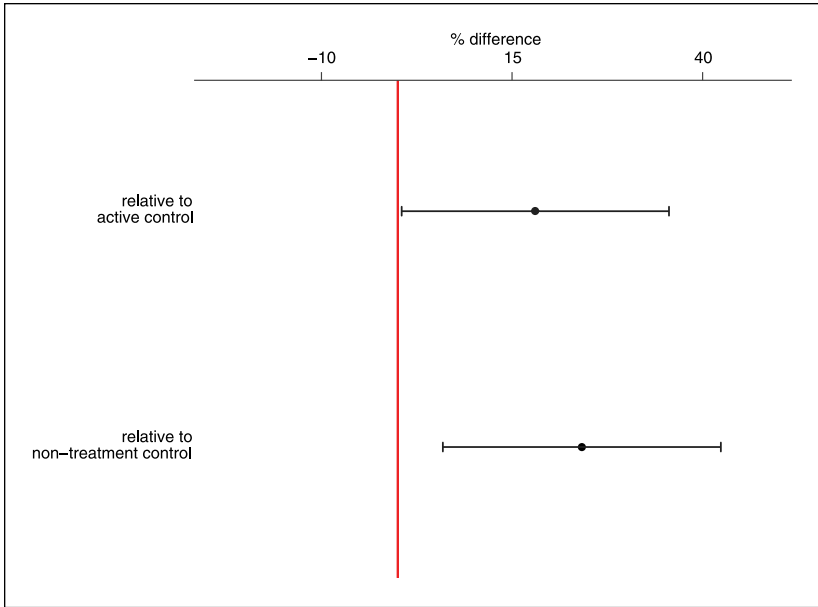


**Figure 4.** Response patterns in “Islamic feminist” treatment group and two control groups.

As we can see from Table 3, respondents exposed to the Qur’anic argument in favor of female leadership did, as per our expectations, exhibit more favorable views toward this proposition than respondents in either the non-treatment or active control groups.<sup>17</sup> We also find no evidence of either acquiescence bias or, more importantly, social desirability bias. As is evident in Table 3, none of the social desirability bias checks is significant at the 95% level. Respondents did not simply agree with whatever they were told the Qur’an endorses.

These results are presented graphically in Figures 4 and 5. Figure 4 displays the baseline response patterns (and 95% confidence intervals [CIs]) for our key treatment group and the two controls. We note that respondents in the active control did appear more likely than those in the non-treatment control to accept the idea of a female leader, but this difference was not statistically significant. Figure 5 plots the effect of our treatment—expressed as the percentage difference in the proportion of respondents accepting female leadership in the Islamic feminist treatment group relative to the two controls.<sup>18</sup>

In short, we found that citizens exposed to a Qur’anic argument in favor of female leadership were 24% ( $\pm 18$ ) more likely than those in the non-treatment control, and 18% ( $\pm 15$ ) more likely than those in the active control, to accept



**Figure 5.** Average effect of “Islamic feminist” treatment, relative to controls (95% confidence intervals).

the notion of women in power. In the following section, we reanalyze these results within the framework of a logistic regression. This allows us to include controls for respondent characteristics and enumerator gender (thus correcting for the slight imbalance between treatment groups on the latter), and further allows us to compare the magnitude of the treatment effect against the effect of other variables deemed by the literature to be important determinants of individuals’ attitudes toward the political status of women.

### Regression Framework

To further probe the results discussed above, we run a logistic regression of the form

$$\text{Logit}(Y = 1) = \beta + \beta_1 \text{Treatments} + \beta_2 X + \varepsilon_i,$$

Where  $Y$  is a dichotomous dependent variable coded 1 if the respondent declares that a female president or prime minister is acceptable and 0 otherwise.  $X$  is a vector of theoretically relevant covariates that includes

- *Respondent age*: Previous studies of the individual-level determinants of gender attitudes have found that egalitarianism is more prevalent among the young (Norris & Inglehart, 2003, pp. 43-44).
- *Respondent gender*: Scholars have typically found women to be slightly more likely than men to exhibit progressive attitudes toward their fellow women, although this may not be true in traditional societies like Egypt (Blaydes & Linzer, 2008).
- *Whether the respondent lives in a rural area*: This is an indicator variable equal to 1 if the primary sampling unit in which the respondent resides has been designated as “rural” by the Egyptian statistical agency (CAPMAS). We expect rural dwellers to exhibit more traditional, and hence less progressive, attitudes toward the role and status of women (Norris & Inglehart, 2003, pp. 43-44).
- *The respondent’s level of education*: We divide respondents into four bins—those with no formal schooling; those with primary (*ibtid āṭ*), preparatory (*īḍādī*), and secondary (*thānawī*) education; those who attended vocational (*ṣināṭ*) schools; and those with college or above. The literature has generally held education to be a positive predictor of progressive attitudes toward women’s rights (Bolzendahl & Myers, 2004; Cunningham, 2008; Norris & Inglehart, 2003; Moen, Erickson, & Dempster-McClain, 1997; Plutzer, 1988).
- *Islamist support*: This is a dummy variable, coded 1 if the respondent voted for the Muslim Brotherhood’s Freedom and Justice Party during Egypt’s 2011-2012 parliamentary elections and the 2012 presidential election. We expect these individuals to be more conservative than other voters and possibly less hospitable to the extension of women’s political roles to the highest executive authorities.
- *Level of religiosity*: This variable was constructed using six post-treatment questions about respondents’ religious practice, and then divided into four quartiles.<sup>19</sup> Inasmuch as more religious people are more likely to subscribe to orthodox Islamic views on the rights of women, we expect them to be less likely to endorse female leadership.
- *Enumerator gender*: Of our 51 enumerators, 39 were female, accounting for approximately 76% of the interviews conducted. A growing literature on enumerator effects suggests that the sex of the individual conducting a survey interview may influence the way respondents answer questions about women’s empowerment (Benstead, 2014; Kane & Macaulay, 1993). Thus, we might expect those who were interviewed by a female enumerator to exhibit more progressive attitudes toward women’s leadership, regardless of the treatment administered to them. Inclusion of this covariate is particularly important because we were

unable to achieve perfect balance on this variable. Respondents in the “Islamic feminist” treatment group were more likely to have a female enumerator (79.9%) than those in the non-treatment control group (73.6%) or the active control (70.41%). We therefore must determine whether the treatment effect identified in the “Results” section persists when this variable is included in the logistic regression.<sup>20</sup>

The results of the regression are presented in Table 4. In order to increase the intelligibility of the results, we report odds ratios in addition to logit coefficients. Further, we calculate the predicted probability that a respondent will endorse female leadership conditional upon a change in one of the key variables of interest, holding all other variables at their means.

First, we note that our treatment effects remain significant even with the inclusion of enumerator gender, suggesting that imbalance on this variable among treatment groups did not affect the results of the experiment. Turning to the other relevant covariates, we find, as the literature leads us to expect, that education has the most powerful effect on shaping attitudes toward women’s empowerment in our data. A respondent with at least a college degree is approximately 34.5% more likely than one with no formal education to believe that it is acceptable for a woman to assume a position of high executive authority. The figure is somewhat lower for those who have had some formal education up to and including secondary school—this group is approximately 19.9% more likely than those without formal education to accept female leadership. We also find a negative correlation between support for the Muslim Brotherhood and acceptance of female leadership. Individuals who voted for the Brotherhood for both the 2011 parliamentary and 2012 presidential elections were approximately 25.9% less likely to accept women’s leadership than those who had not voted for the Brotherhood.

How does the effect of these variables compare with the effect of our treatment? As we described earlier, respondents exposed to the “Islamic feminist” treatment were approximately 28% more likely to accept female leadership than those in the non-treatment control group, and approximately 18% more likely than those in the active control. When we calculate the marginal effect of the scriptural treatment based on the logistic regression results in Table 4, the effect is substantively the same, 22.6% compared with the non-treatment control, and 16.7% compared with the active control. To put this result in context, the magnitude of the effect is similar to that of a secondary school education (relative to no formal education). Of course, we caution against interpreting this result as meaning that a brief interaction in the context of a survey experiment has the same effect on an individual’s attitudes as several years of formal schooling. Instead, we make a more limited claim: The results of our experiment suggest



**Table 4.** Logistic Regression of Support for Female Leadership Against Treatments and Key Independent Variables.

| Variable                                 | Coefficient          | Odds ratio           |
|--|----------------------|----------------------|
| <b>Experimental treatments</b>           |                      |                      |
| Islamic feminist (1a)                    | 0.327**<br>(0.137)   | 1.387**<br>(0.190)   |
| Secular feminist/active control (2a)     | 0.0762<br>(0.140)    | 1.079<br>(0.151)     |
| Islamic patriarchal (3a)                 | 0.110<br>(0.140)     | 1.116<br>(0.156)     |
| Secular patriarchal (4a)                 | 0.0860<br>(0.139)    | 1.090<br>(0.152)     |
| Age                                      | 0.00453<br>(0.00338) | 1.005<br>(0.00339)   |
| Gender (0 = male; 1 = female)            | 0.0916<br>(0.112)    | 1.096<br>(0.123)     |
| Employed                                 | -0.203*<br>(0.113)   | 0.816*<br>(0.0920)   |
| Rural                                    | 0.148<br>(0.0898)    | 1.159<br>(0.104)     |
| <b>Education</b>                         |                      |                      |
| Up to secondary                          | 0.281**<br>(0.129)   | 1.324**<br>(0.171)   |
| Vocational                               | 0.278**<br>(0.126)   | 1.321**<br>(0.167)   |
| College or above                         | 0.469***<br>(0.151)  | 1.598***<br>(0.241)  |
| <b>Religiosity quartiles</b>             |                      |                      |
| Lower middle quartile                    | -0.255**<br>(0.117)  | 0.775**<br>(0.0910)  |
| Upper middle                             | -0.133<br>(0.124)    | 0.876<br>(0.109)     |
| Top quartile                             | -0.243**<br>(0.124)  | 0.784**<br>(0.0972)  |
| Muslim Brotherhood voter                 | -0.448***<br>(0.136) | 0.639***<br>(0.0870) |
| Enumerator gender (0 = male; 1 = female) | 0.173*<br>(0.103)    | 1.189*<br>(0.122)    |
| Constant                                 | -1.088***<br>(0.259) | 0.337***<br>(0.0873) |
| Observations                             |                      | 2,346                |
| Pseudo-R <sup>2</sup>                    |                      | .0148                |

Robust standard errors in parentheses.

\*p < .1. \*\*p < .05. \*\*\*p < .01.

that justifying female political leadership in Islamic terms at the very least creates significant space for some Muslims to express support for it.

### *Heterogeneous Treatment Effects*

Although our principal interest is in detecting an average treatment effect, the literature on the determinants of gender attitudes suggests three key variables that might moderate the effect of our treatment and which are thus worthy of further investigation (Baron & Kenny, 1986). The first is religiosity. Inasmuch as the patriarchal attitudes under consideration here are thought by some to be religiously given, we should expect the effect of treatments to vary across different levels of respondent religiosity. The second is education. Several studies of the determinants of gender attitudes note that more educated respondents appear to be more hospitable than their less educated counterparts to the notion of female political, economic, and social quality (see, for example, Bolzendahl & Myers, 2004; Cunningham, 2008; Inglehart & Norris, 2003; Moen et al., 1997; Plutzer, 1988). The third potential treatment moderator is gender. Here, we identify two ways in which gender might influence the effect of the treatments. The first is that female respondents might be expected to be more likely than men to express support for female leadership *prior* to treatment. The second is that female *enumerators* are generally more likely to *elicit* the expression of this view than male ones (Benstead, 2014). The former suggests that women might be *less* responsive to the treatment than men (as men have further to travel); the latter that the treatment should be more potent when delivered by female interviewers than by males. We investigate each of these in turn.<sup>21</sup>

**Religiosity.** Previous experimental studies suggest that the likelihood of responding positively to religious cues increases with the religiosity of the respondent (Albertson, 2015; Calfano & Djupe, 2009; McLaughlin & Wise, 2014). However, we expect the interaction between our treatments and respondent religiosity to conform to a different pattern. Since, as we have seen in the section entitled, “Islam, Arab Culture, or Economic Structures?” much of the subordination of women in the Arab world is given religious justifications, we would expect the most religious individuals *not* to respond to our treatment, as they are possessed of a wealth of counterarguments against women’s empowerment that are also grounded in scripture. Similarly, we might expect the least religious people not to respond to the Qur’anic argument for women’s empowerment, as this is a class with whom scripture should not be salient in the formation of their opinions. Instead, we should find that it is individuals of middling levels of religiosity—where scripture is important enough that they find arguments grounded in it to be legitimate, but not so important that they

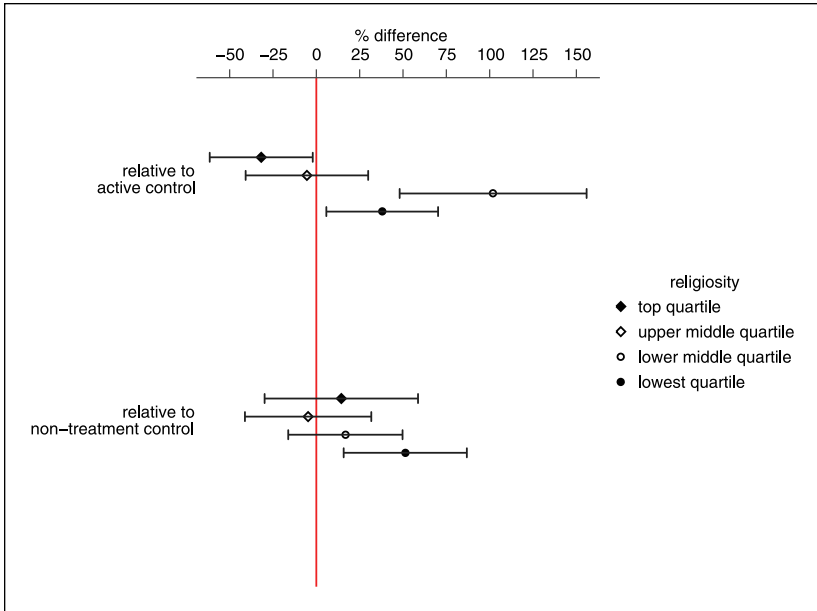
come to the experiment with a fully theorized, Islamically inflected, conservative stance on gender equality—who are most likely to be influenced by the religious prompt in favor of female executive leadership.

Thus, we are interested in examining the effect of the treatment conditional upon respondents' level of religiosity. For instance, we want to know how the most religious people in the treatment group responded to the treatment, measured against the most religious people in the control. Again, following Grimmer et al. (2013), we define this “conditional average treatment effect” as follows:

$$\delta(T, x) = E[Y(T) - Y(C) | X = x],$$

Where  $\delta(T, x)$  is the change in the dependent variable relative to the control, conditional on value  $x$  of independent variable  $X$ . Once again, we calculate treatment effects relative to both the active and non-treatment controls. Figure 6 plots the 95% CIs for the treatment effect for each religiosity quartile, relative to the same religiosity quartile in each of the two control groups. As we can see from the figure, the effect of the treatment appears to be greatest at lower levels of religiosity. In fact, when the treatment group is compared with their counterparts in the active control (the top half of Figure 6), we find that respondents at the highest level of religiosity are 46.7% less likely to accept female leadership when the Islamic feminist treatment is applied (one-tailed  $p = .0186$ ). Respondents in the lower middle quartile of religiosity are 102% more likely to support female leadership than respondents of the same level of religiosity in the active control group ( $p = .0001$ ). And respondents at the lowest level of religiosity in the treatment group are 38% more likely to accept female leadership than similarly irreligious respondents in the active control group ( $p = .0108$ ). When the treatment group is compared with the non-treatment control (the bottom half of Figure 6), we only observe a significant heterogeneous treatment effect at the lowest level of religiosity. Here, individuals in the lowest religiosity quartile are 51% more likely to accept female leadership when assigned to the Islamic feminist treatment than when assigned to the non-treatment control group ( $p = .0025$ ).

The greater observed responsiveness to religious arguments at lower levels of religiosity does not necessarily run contrary to our expectations. This is because even the least religious respondents in our survey are fairly religious by any absolute standard. For instance, more than 77% of respondents in the lowest religiosity category say they pray “daily” or “often,” with only 4.9% saying they “never” pray. What this suggests is that the kinds of avowedly secular individuals whom we would expect not to respond to religious arguments at all make up a very small portion of our sample. Consequently, we



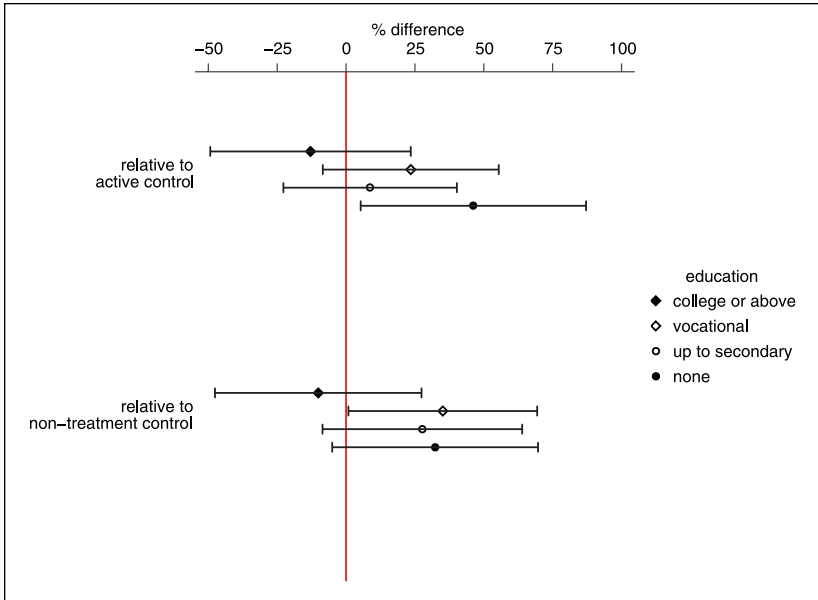
**Figure 6.** Effect of treatment, conditional on religiosity.

emphasize that the lower religiosity quartiles in our sample must be viewed as “moderately” religious, not irreligious.

Although the effects described above are significant at the 95% level, we note that this is prior to any adjustments for multiple comparisons. Given that we have eight comparisons—four religiosity quartiles and two control groups—and four of them turned out to be statistically significant at the 95% level, we must be concerned that some of these results occurred by chance. To minimize the risk of false positives, we apply the Bonferroni correction to our estimates of standard errors (see Bland & Altman, 1995, for a useful description; for use in political science, see Charney & English, 2012). This technique attempts to ensure that the familywise error rate is constrained to be below a given threshold of statistical significance. At a level of 95% confidence ( $p < .05$ ), for any of our eight comparisons to be deemed significant, it must achieve a  $p$  value of less than .05 divided by 8, or .00625. The application of this correction leaves us with two statistically significant results: respondents in the lower middle quartile of religiosity were more responsive to the treatment when compared with the active control ( $p = .0001$ ), and respondents in the lowest religiosity quartile were more responsive to the treatment when compared with the non-treatment control ( $p = .0025$ ).

One outcome worth investigating further is the effect of the treatment relative to the active control for the most religious respondents. As is evident from Figure 6, this effect appears to be negative (although this is not significant at the 95% level after the application of the Bonferroni adjustment). To probe this result, we analyze the average responses for the most religious respondents (i.e., those in the top quartile) in the three groups: the non-treatment control, the active control, and the treatment. We find that in the non-treatment control, 26.56% of the most religious respondents ( $n = 128$ ) endorse female leadership. In the active control—that is, the group that received a secular-scientific argument for women’s empowerment—this proportion (again, for the most religious respondents) increased to 44.55% ( $n = 101$ ). Moreover, the difference in average responses for the most religious subgroup in the active and non-treatment controls is statistically significant at the 95% level ( $p = .0022$ ), even after applying the Bonferroni correction for eight comparisons (which, recall, requires a  $p$  value of less than .00625 for statistical significance at this level). In contrast, for the most religious respondents in the Islamic feminist treatment group ( $n = 102$ ), the average support for female leadership is 30.39% (which is not significantly different from the non-treatment control).

To put these results as plainly as possible, it appears that *less* religious people (who, again, in our sample cannot be viewed as *irreligious*) respond positively to the religious argument for female leadership, whereas the *most* religious people respond positively to the secular-scientific argument for this proposition. These findings suggest a potential mechanism underlying the observed effects. Respondents come to the experiment with their own considered views on the proper limits to the roles of women in society. Exposing them to *new* information may enable them to update those views (or at least may render them willing to consider and express alternative ones). For the *most* religious people, a Qur’ānic verse in favor of women’s leadership is unlikely to fit that bill. In fact, such respondents—being avid consumers of religious texts and programs—will likely have encountered the verse before, as well as conservative interpretations of it. In contrast, a “scientific” argument for female empowerment is more likely to be something to which they have not previously been exposed. For the *less* religious (but still religious) Egyptians at the low end of that country’s religiosity distribution, it may be the Qur’ānic endorsement of female empowerment that constitutes new information, and which enables this demographic to publicly assent to a more progressive view. We do not wish to push this interpretation too far—the small size of the sample for this subgroup analysis limits our ability to draw firm conclusions. What we can say with a high degree of certainty is that arguments for the political empowerment of women that are rooted in religious discourse are likely to be broadly influential, and that to the extent that such arguments have more influence with a particular group, it will be with those who are less, not more, immersed in faith and scripture.



**Figure 7.** Effect of treatment, conditional upon respondent's level of education.

*Education.* As noted above, the empirical literature on the determinants of attitudes toward gender equality has long found a positive correlation between education and support for female empowerment. The existence of this relationship suggests that a respondent's level of education could have a significant influence on how they respond to the treatment administered in this experiment. Given that we would expect more educated individuals to *already* espouse egalitarian attitudes toward women's leadership, we might expect the Islamic feminist treatment to have the least impact on these individuals, and a comparatively greater impact upon those with less education.

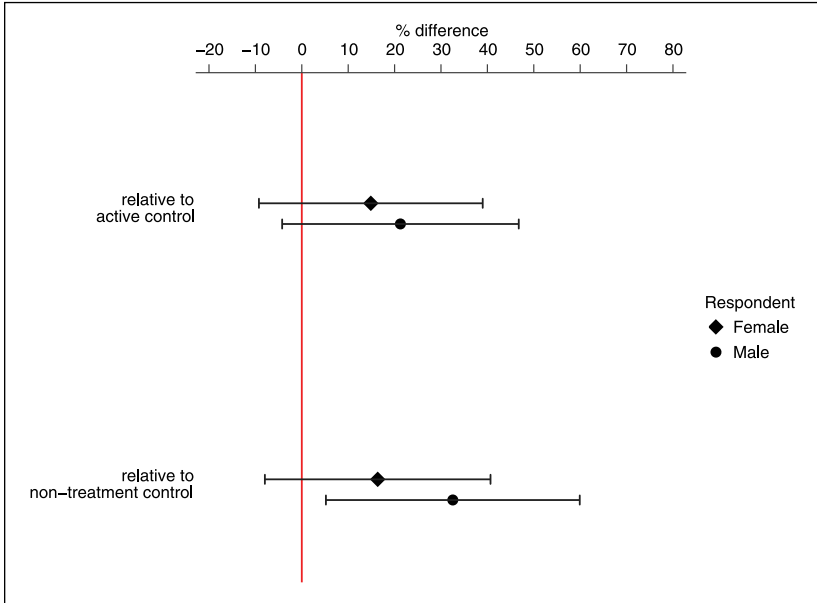
To test this proposition, we divide respondents into four categories—those with no formal education, those with up to a secondary education, those who attended vocational school, and those with college or above—and measure the effect of the *Islamic feminist* treatment against the *non-treatment* and *active* controls for respondents in each of these categories. The results of those comparisons are displayed in Figure 7. The top half of the figure represents the 95% CIs (prior to correction for multiple comparisons) for the difference in support for female empowerment between the Islamic feminist and *non-treatment* control conditions for respondents in each of the four education subgroups. The bottom half of the figure

represents the effect of the treatment for each subgroup in the treatment and *active* control conditions.

As is evident from the figure, the general pattern conforms to our expectations: The treatment appeared to have a greater positive effect among respondents in the lowest education level than it did among the most educated respondents. This is to be expected, as the most educated respondents were already more predisposed to support women's empowerment to begin with—41.89% of college-educated respondents in the non-treatment control condition were supportive of female leadership, whereas only 30.34% of those with no formal education were. However, when the Islamic feminist treatment was applied to this less educated group of respondents, their support for female empowerment jumped to 40.16%. The magnitude of the difference for this subgroup was even larger when compared with the active control (where only 27.46% of the uneducated supported female leadership). Illiterate respondents in the Islamic feminist treatment condition were approximately 46% more likely to endorse female leadership than their counterparts in the active control group. That said, the difference between these groups is not significant at the 95% level (one-tailed  $p = .013$ ) after applying the Bonferroni correction for eight comparisons (which requires a  $p$  value of less than .00625).

*Respondent and enumerator gender.* What are the effects of gender—of both the respondent and the enumerator—on an individual's response to the treatments? Figure 8 plots the 95% CIs of the treatment effects conditional upon respondent gender. There seems to be no discernible effect of gender when women (men) in the treatment are compared with women (men) in the active control. However, men in the treatment group were 32.6% more likely than men in the non-treatment control to support female leadership. Even when applying the Bonferroni correction for four comparisons (two genders, two control groups), the effect remains significant—the one-tailed  $p$  value of the difference of means test between men in the treatment and men in the non-treatment control is .01, which is smaller than the Bonferroni-adjusted  $p$  value of .0125. In other words, men were more responsive than women to Qur'anic arguments in favor of female leadership.

Why would this be so? One potential explanation is that women are already more likely than men to endorse female leadership, so the additive effect of the treatment is minimal. We find evidence for this when we examine control group responses by gender. Although only 29.6% of men in the non-treatment control group endorsed female leadership, 36% of women in this group did. In the active control, the figures are 32.3% and 36.5% respectively. After the treatment, however, the figures are about even: 39.2% of men and 41.9% of women approve of female executive leadership. In short, the



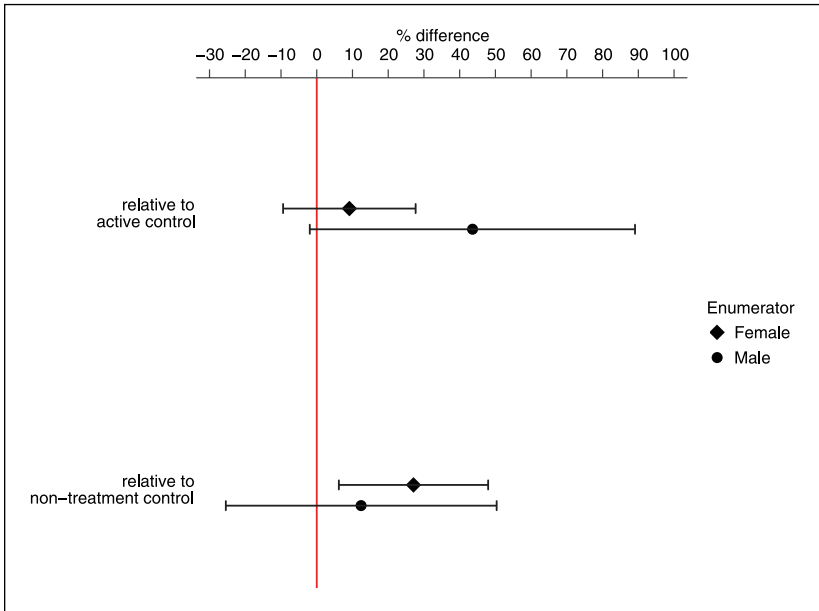
**Figure 8.** Effect of treatment, conditional on respondent gender.

magnitude of the difference for men is much higher than for women, because men have much further to travel.

We now move from the gender of the respondent to the gender of the interviewer. The literature suggests that female interviewers should elicit progressive attitudes toward gender relations, mainly due to social desirability bias (Benstead, 2014; Blaydes & Gillum, 2013). However, examining control group responses generates limited evidence for this proposition. In the non-treatment control, 32.6% of respondents approved of female leadership, regardless of whether the interviewer was male or female. We then ask whether the treatment effect differs according to the gender of the enumerator. To answer this question, we compare average responses to women interviewers using the Qur'anic progressive argument to average responses to women interviewers in the active and non-treatment control conditions.

Figure 9 plots the 95% CIs of the treatment effects relative to the two controls, conditional upon enumerator gender. There are two sets of confidence intervals: the first presents treatment effects, by enumerator gender, relative to the active control, and the second presents treatment effects relative to the non-treatment control. Within each set, the first confidence

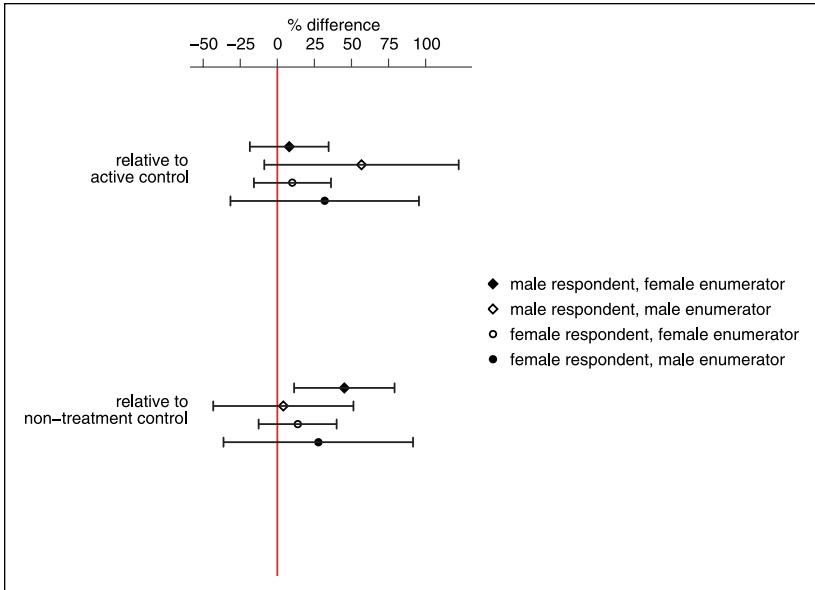




**Figure 9.** Effect of treatment, conditional on enumerator gender.

interval represents the percent difference in support for female leadership between those interviewed by women in the treatment and control groups respectively, and the second confidence interval represents the percent difference in support for female leadership between those interviewed by men (again, in the treatment group and control groups respectively). Here, we see that enumerator gender is only a significant modifier of the treatment relative to the non-treatment control. Respondents who received the Islamic feminist treatment from a woman were 27% more likely to accept women’s leadership than those who were surveyed by a woman in the control group. The effect is significant at the 95% level, using the Bonferroni adjustment for four comparisons ( $p = .0056 < .0125$ ).

So far, we have presented evidence that men were more responsive to the Qur’anic treatment than women, and that women enumerators were most effective when they used the Qur’anic treatment. Figure 10 shows the results of the interaction between the gender of the respondent and enumerator. The figure plots the treatment effect for the four possible enumerator–respondent combinations: male respondent, female enumerator; male respondent, male enumerator; female respondent, female enumerator; and female respondent,



**Figure 10.** Effect of treatment, conditional on enumerator and respondent gender.

male enumerator. Although the enumerator–respondent combination does not appear to moderate effects of the treatment relative to the active control, it appears that relative to the non-treatment control, the effect of the treatment is disproportionately felt by males responding to females. A male who heard a Qur’ānic argument from a female enumerator was approximately 45% more likely to support female leadership than a male respondent with a female enumerator in the non-treatment control group. Again, this result is significant with the Bonferroni correction for eight comparisons ( $p = .0046 < .00625$ ).

Although the overall picture provided by these subgroup analyses suggests that there are not clear heterogeneous treatment effects, these results raise the possibility that the willingness of men to accept or support female leadership in response to external arguments is a function both of the deliverer of the argument and the cultural legitimacy of that argument. In the Egyptian context, the results of our experiment could be interpreted to mean that a woman who makes a secular argument for female equality can be dismissed by men as partaking of an alien, culturally inauthentic discourse. In contrast, a woman who makes a progressive argument for female equality that is grounded in the shared and highly legitimate text of the Qur’ān may be more difficult to dismiss. More research is needed to tease out the precise

causal mechanism at play here, but these results suggest that religious discourse in favor of women's equality can serve as a useful tool in the hands of women who are trying to encourage change in the attitudes of men.

## Conclusion

In this article, we explored the hypothesis that patriarchal attitudes can be ameliorated by offering progressive reinterpretations of religious scriptures. We reported the results of what we believe to be the first experimental exploration of this hypothesis in the Muslim world. In the study, approximately 2,500 adult Egyptians were randomly assigned to hear religious and non-religious arguments for and against the admissibility of women as national political leaders. Analysis of their subsequent support for this proposition showed that respondents who had been exposed to a religious argument in favor of women's leadership were significantly more accepting of this prospect than either those who had been exposed to the non-religious group or those in the control group. In fact, we estimate that the difference in support for female leadership between those who heard a Qur'anic argument for it and those who did not was equivalent to the effect of several years of schooling, although we recognize that the effect of such a brief and focused treatment is confined in scope, and we make no claims as to its temporal durability.

Although the empirical evidence offered in this article is drawn from Egypt, we have reason to expect these findings to be applicable to other Muslim-majority, Arabic-speaking countries. As we have seen, the adoption of religiously justified patriarchal values in such societies is widespread. We have less reason, however, to believe in the applicability of these findings to *non-Arab*, Muslim countries, such as Indonesia, where women's political and labor force participation are higher than in most of their Arab counterparts (Robinson, 2005; Ross, 2008). In these relatively more gender-egalitarian societies, we might expect experimental treatments *affirming* patriarchal understandings of Islam to have the greatest effect—*reducing* the space for the expression of egalitarian gender attitudes.

If this article's findings stand up to replication and extension by future scholars, they will have demonstrated the viability of the Islamic feminist model for changing the patriarchal attitudes endemic in the Muslim-majority countries of the Arab world. Almost 40 years ago, the Egyptian feminist intellectual, Nawal El Saadawi, argued forcefully that to achieve "real equality between the sexes," women must compel men "to make the changes within themselves which are necessary for human progress and which they seem so reluctant to make." This study indicates that religious discourse can be a powerful implement in the hands of Muslims seeking to do just that.

We are, however, aware of the pitfalls of such a strategy. Whether Islam can (or should) be used to generate a discourse of female empowerment is the subject of vigorous disagreement. As Moghadam (2002, p. 1142) points out, some have argued that “Islamic feminists [ . . . ] either consciously or unwittingly delegitimize secular trends and social forces,” and that “the activities and goals of ‘Islamic feminism’ are circumscribed and compromised.” Haideh Moghissi (1999, p. 127) asks, “How could a religion which is based on gender hierarchy be adopted as the framework for struggle for gender democracy and women’s equality with men?” Brown (2006, p. 427) is more sympathetic to the strategy of using religion to change gender attitudes, but worries that “women who cannot easily be labelled” as “good” Muslims are “denied ready access to this strategy.” Similar concerns have been raised by Mojab (2001) and Fernea (2010). We are unable to resolve this debate. We can only offer evidence on the efficacy of an Islamic feminist rhetorical strategy, and leave to activists and theorists the greater task of determining whether the gains to be had from deploying Islamic rhetoric and symbols in service of women’s rights are outweighed by the potential costs of doing so.

The study also has implications for our understanding of the persuasive power of religious discourse more generally. When it comes to the Muslim world, the conventional wisdom has long held that the influence of religion on attitudes and behavior is substantial, and extends across contexts both sacred and profane (Davis & Robinson, 2006; Hudson, 1977). Some have therefore argued, along with the Islamic feminists, that one way to increase Muslims’ compliance with a range of proposed policy reforms in an array of arenas is to wrap those reforms in mantles of religious legitimacy. For instance, in an essay on the reform of the labor code in post-Saddam Iraq, Zulfikar (2006, p. 423) argued that “by containing an Islamic framework, the code will increase its chances of success since it will certainly be considered more legitimate by the Iraqi people.” Similarly, Sachedina (2009, p. 190) argued that to afford the Universal Declaration of Human Rights “cultural legitimacy” in the Muslim world, “religious discourse is not only licit but indispensable.”

The findings of the present study would appear to both validate and complicate this perspective. We have seen evidence to suggest that Islamic discourse can be used to help carve out space for the expression of progressive views with respect to at least one aspect of women’s role in society. But at the same time, we have also seen that religious discourse applied to an arena that may be less central to dominant understandings of the faith—in the case of our experiment, wage policy—had little effect on the expression of attitudes toward that policy. This suggests that religion’s influence is circumscribed in ways that scholars of the Muslim world have yet to fully absorb and analyze. Further research is needed to limn the boundaries of Islam’s influence on the attitudes of ordinary

Muslims, and the likelihood that religion in general may be recruited in the promotion of progressive change among believers everywhere.

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### Notes

1. The source for this and subsequent figures is the International Parliamentary Union database of women in national parliaments, available at <http://www.ipu.org/wmn-e/classif.htm>
2. Details of the survey and randomization procedure are available in the online appendix.
3. "Muftī Miṣr yu'akkid an al-sharī'a al-islāmiyya lā tujīz lil-mar'a ri'āsat al-dawla (The Mufti of Egypt confirms that Islamic law does not permit a woman to become president of the state)," *al-ʿArabiyya*, January 27, 2007. Available at <http://www.alarabiya.net/articles/2007/01/27/31122.html>
4. "Shaykh al-Azhar: Jumhūr al-fuqahā' la yuqir ri'āsat al-mar'a lil-dawla (Rector of al-Azhar: Most jurists do not approve of a female presidency)," Kuwait News Agency, March 18, 2005. Available at <http://www.kuna.net.kw/ArticlePrintPage.aspx?id=1510790>
5. Nielsen (2015) registers the ethical challenges inherent in attempts to change the religious beliefs of experimental subjects. However, our study does not confront these dilemmas, as it only exposes respondents to types of arguments already in wide circulation.
6. Fawziyya ʿAbd al-Sattār, "al-Ḥaq fī al-musāwah fī al-Islām bayn al-mar'a wa al-rajul (The right to equality in Islam between men and women)," *al-Ahrām* (Cairo), February 19, 2012. Available at: <http://www.ahram.org.eg/archive/Religious-thought/News/132082.aspx>

7. "Rad shubhat musāwah al-kalb wa al-mar'a (Response to the accusation of equating dogs and women)," Islamweb.net, December 26, 2001. Available at <http://fatwa.islamweb.net/fatwa/index.php?page=showfatwa&Option=FatwaId&Id=12211>
8. We emphasize that no deception was involved, as the treatments refer broadly to actual studies. See Ibarra, Carter, and Silva. "Why men still get more promotions than women." *Harvard Business Review* 88.9 (2010): 80-126. See also Zenger and Folkman. "Are Women Better Leaders Than Men?" *Harvard Business Review*, March 15 (2012): 2012.
9. The text of the preamble in this active control was as follows: "Some people say it is not good for a woman to assume a position such as the presidency of the republic or the prime ministership. And they rely on the results of numerous scientific studies. For example, in 2010, a group of leading scholars completed a study that showed that men had greater leadership abilities than women.
10. More broadly, although some scholars (see, for example, Davis & Robinson, 2006) have argued that Islam's economic strictures are as salient as its moral and cultural ones, recent research by Pepinsky and Welborne (2011) suggests that Islam cannot be said to induce clear preferences over economic policy.
11. Fatwas can be searched using the search bar at the top of the website (ar.islam-way.net) and selecting *fatāwā* from the drop-down menu. The searches described in this paragraph were conducted in October 2015.
12. See, for example, Bāsim Yūsif interview with Hāla Shukralla, president of the left-leaning Constitution Hizb al-Dustūr, *al-Birnāmij* (television program), CBC network, March 14, 2014. Available at <http://www.youtube.com/watch?v=SbRwgjn4dWg>
13. "Egypt's El-Sisi approves LE42,000 monthly wage cap for state employees," al-Ahram Online, July 3, 2014. Available at <http://english.ahram.org.eg/NewsContent/3/12/105396/Business/Economy/Egypt's-ElSisi-approves-LE,-monthly-wage-cap-for-st.aspx>
14. The Qur'ānic argument in favor of the wage ceiling was worded as follows: "Some people say it is good for the government to impose an upper limit on wages. And they rely on a verse from Sūrat al-Tawba (Chapter of Atonement) in the Holy Qur'ān which says, 'And those who hoard gold and silver and spend it not in the path of God, announce unto them a painful torment.' And they interpret it to mean that the government should prevent the accumulation of extreme fortunes." The Qur'ānic argument against the wage ceiling was as follows: "Some people say it is not good for the government to impose an upper limit on wages. And they rely on a verse from Sūrat al-Naḥl (Chapter of the Ant) in the Holy Qur'ān that says, 'And God favored some of you to others in wealth.' And they interpret it to mean that it is not the government's role to fix (determine) wealth."
15. The active control for the scriptural argument in favor of the wage ceiling was as follows: "Some people say it is good for the government to impose an upper limit on wages. And they rely on the results of numerous scientific studies. For example, in 2010, a group of leading scholars completed a study that

showed that government oversight and standardization of wages and salaries has a good impact on the economy and development.” The active control for the scriptural argument against the wage ceiling was as follows: “Some people say it is not good for the government to impose an upper limit on wages. And they rely on the results of numerous scientific studies. For example, in 2010, a group of leading scholars completed a study that showed that the interference of the government in setting wages and salaries has a bad effect on the economy and development.”

16. To rule out experiment-order effects, we varied the order of the experiments. Within each treatment group, half were administered the female leadership experiment first (prior to the experiment on the wage ceiling), and the other half were administered the wage ceiling experiment first. We found no effect of question order on the outcome variable.
17. Respondents in the *Islamic patriarchal* treatment group express views that are somewhat more egalitarian than, but not statistically different from, those expressed in either the active or non-treatment controls. This pattern likely reflects the presence of ceiling effects (i.e., the difficulty of eliciting more extreme views when the equilibrium is already extreme). We note, however, that average responses in the *Islamic feminist* treatment group remain more accepting of female leadership than those in the *Islamic patriarchal* group (one-tailed *t* test,  $p = .078$ ).
18. Although our hypotheses are one sided, the figures display two-sided confidence

intervals, defined as  $\left\{ \delta(T) - 1.96 \times \frac{s_T}{\sqrt{n_T}}, \delta(T) + 1.96 \times \frac{s_C}{\sqrt{n_C}} \right\}$ .

19. Specifically, respondents were asked how often they (a) pray each day, (b) fast during Ramadan, (c) watch or listen to religious programs on television or radio, (d) attend religious lessons in the mosque, (e) attend Friday prayers, and (f) listen to the Qur’ān. For each item, respondents could indicate that they “never,” “sometimes,” “often,” or “always” engaged in the activity (coded as 1, 2, 3, and 4 respectively on a 4-point scale). We added the responses on each of these items to generate a 24-point religiosity scale (Cronbach’s  $\alpha = .6018$ ). The resulting variable is unimodally distributed, with mean of 18, standard deviation of 3.2, and values ranging from 6 to 24. To simplify our analysis, we then divided this continuous variable into four quartiles. Due to missingness (i.e., responses of “don’t know”) on one or more of the six items in the index, 146 cases were excluded from analyses using this variable. These missing cases are evenly distributed among the treatment groups: 27 cases (5.4%) of the non-treatment control, 29 cases (5.75%) of the Islamic feminist treatment group, and 30 cases (6.1%) of the active control group.
20. Other characteristics of the enumerator, such as their religiosity, could also influence responses. However, we do not have data on this score. Although most of our enumerators were female, and most of those wore the headscarf (or *hijab*), there are, as Patel (2012) has noted, different styles of *hijab* that communicate different levels of wearer piety.

21. All heterogeneous effects are calculated as comparisons of means. In the online appendix, we present the same effects in a regression framework that allows us to control for potential confounds. The results are substantively similar to those presented in this section.

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