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Effect of Religious Legislation on Religious Behavior:
The Ramadan Fast

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Abstract

State laws compelling citizens to comply with elements of religious law – also known as religious legislation – are globally pervasive. Previous research has well documented the incidence of myriad examples of religious legislation. These laws’ practical effect on citizens’ behavior, however, has been less examined. This article looks at the effect of one piece of religious legislation: state laws enforcing the Ramadan fast. It demonstrates that the use of state power to sanction violations of religious law significantly increases citizens’ compliance with this religious law.

In 2016, a retired German schoolteacher was fined five hundred Euros for bedecking his car in window stickers mocking the crucifixion and advocating killing the pope. The judge, who could have sentenced the man to three years in prison for defamation of religion, stated that “Freedom of expression is limited by the law,” and blasphemy is beyond the limit (Huggler 2016). In 2015, four Moroccan men were given suspended two-month jail sentences for drinking fruit juice in a public square in Marrakesh during Ramadan, in defiance of the religious fasting requirement. An activist with the Moroccan Association for Human Rights called the judge’s decision “courageous” in its moderation because the criminal code permitted a sentence of up to six months incarceration and a heavy fine (“Maroc” 2015). Indian butchers who slaughter cows for beef face punishments ranging from fines to life imprisonment in most Indian states, as well as potential vigilante enforcement (Human Rights Watch 2019). In 2017, the Indian Supreme Court suspended a law that would have extended the bans to include buffalo and camels and would have applied nationwide (“India Supreme Court”). What do each of these cases have in common? They are all recent instances of states punishing behavior that violates elements of religious law.

The sanctions are not merely in accordance with religion. The state has chosen to enforce formally precepts from religious law in its own civil or criminal codes. The Religion and State Project calls such laws *religious legislation*. [1] Religious legislation can include regulations governing personal status law (i.e. marriage and divorce) and inheritance based on religious law, criminalizing blasphemy, restricting the sale of certain foods or alcohol, or regulating public activities and business operations on religious holidays or Sabbath, among other potential policies. They are separate and distinct from establishing an official religion or refusing to recognize particular religions, each of which may or may not co-occur with religious legislation.

Religious legislation is globally pervasive. It is not restricted to one region, to developing countries, to autocracies, or to any particular faith tradition. Several types of religious legislation are common in Western democracies. In fact, the United States is the only Western democracy with no national-level religious legislation, though almost all American states have such laws (Fox 2008); Belgium and the United Kingdom, among Western democracies, have the greatest number of articles of religious legislation (Fox and Sandler 2005). [2] Apart from blue laws and restrictions on abortion and homosexuality, this type of law is much more common in Muslim-majority countries, especially those with an established religion (Fox 2011, 2015). Fox (2015, 67) notes that, globally, “most states to some extent support religion in this manner, but only a minority do so extensively.” [3] While democratization and separation of religion and the state may relate to the propensity to enact religious legislation, they are not proof against such policies.

From 1990 to 2008, rates of religious legislation remained stable globally, with the exception of changing laws on abortion and homosexuality (Fox 2015). Increases in regulation, Fox notes, were primarily driven by local and regional government policies, often associated with grass-roots support, that culminated in national regulatory shifts. On the other hand, prominent repeals of decades and centuries old laws, like revoked blasphemy restrictions in Denmark (Hofverberg 2017) or the relaxation of abortion restrictions in Ireland (de Freytas-Tamura 2018), were also often popularly accepted if controversial. Given that states regularly enforce religious legislation, which can endure over long periods with public support, what are the implications for citizens’ behavior of such regulations?

Crime and punishment are typically treated as functions of rational choice. Individuals choose among a set of actions based on the costs and benefits they anticipate. Religious

legislation, by increasing the costs associated with violating religious law, should increase compliance with religious precepts. Some scholars, however, have argued that religion and religious behavior should not be subject to a rational choice framework. Religion, they suggest, is not based on transaction choice, and compliance with religious law would depend on personal characteristics, not cost-benefit analysis. From this standpoint, religious legislation may not affect an individual's propensity to observe a religious obligation.

This article seeks to test the effect of state enforcement of religious legislation on citizens' religious behavior. It starts with a brief discussion of rational choice treatments of crime and religion. Then it develops an empirical test based on state enforcement of the Ramadan fast, a religious requirement for Muslims under Islamic law, using surveys of Muslim populations in Europe, Asia, and Africa. It shows that the use of state power to enforce religious law increases citizens' propensity to comply with the religious mandate.

Rational Choice and Punishment

Religious legislation can be considered like other laws, though it may lack secular justification. Laws codify social obligations and sanctions: "The promulgation of a law often transforms a vague principle with an imprecise sanction into an explicit obligation with a definite sanction" (Cooter 2000, 21). In a rational choice view of law, citizens act in response to perceived incentives. The legal system shapes those incentives. Law violators engage in crime when they believe the benefit (monetary and otherwise) they will derive, accounting for the likelihood of success, supersedes the costs (monetary and otherwise) they will incur in committing the crime (Becker 1968; Ulen 1999). These costs include punishments, which are weighed against the probability with which the decision-maker believes he would be caught and punished. The state punishment added by the law would be in addition to any social sanction

(Cooter 2000). Under this theory, any added punishment would be expected to decrease individuals' propensity towards violation when there is a non-zero possibility of bearing that punishment.

A penalty will reduce lawbreaking if it rises to the level of a sanction. As Cooter (1984, 1523) explains, the impact of the intended punishment distinguishes between “a sanction as a detriment imposed for doing what is forbidden, and a price as money extracted for doing what is permitted.” If the punishment imposed by a regulation is too light, it may not prevent but rather induce violations. Gneezy and Rustichini (2000) find such a situation when considering schools lightly fining parents who do not pick up their children on time. Parents switched from a viewpoint in which lateness as an imposition on the instructors that could culminate in their children being expelled – a sanction – to a mindset that they were paying for the instructors' time and could “buy this service as much as needed” (Gneezy and Rustichini 2000, 14). A larger fine, they speculated, would have the desired punitive and ameliorative effect on parents' behavior. Lawmakers should use sanctions if they know the preferred level of “socially desirable behavior” but cannot accurately assess the cost of undesirable behavior and use prices when they can identify the social cost of ill conduct but are unsure of the “socially desirable level” (Cooter 1984, 1524). If harm cannot be accurately assessed or the price would be “astronomical” – such as a major crime like kidnapping – a price cannot counteract the harm (Posner 2014, 219). The law should then focus on prevention. For religious legislation, the religion determines the preferred behavior, and the optimal level is total compliance; these facts favor the imposition of sanctions. Additionally, the harms that could occur, including eternal punishment and spreading of that behavior in the community, are profound; this suggests prices would be impossible to set. For religious legislation, then, states are expected to employ sanctions.

This is easier with some punishments than others. While prison “is clearly a sanction” “because liberty is so universally and intensely valued,” “[f]ines condemn much more ambivalently” (Kahan 1996, 621). A small fine is readily viewed as a price to violate a rule about which society appears not to care strongly. Unenforced regulations potentially pose a similar risk by lowering the expected value of the punishment – the effective cost is based on the likelihood that the law is enforced – which could turn an apparent sanction into a price in the participants’ minds, because they do not anticipate experiencing the sanction: “A punishment is most effective in reducing a behavior when it is certain and immediately follows that behavior” (Gneezy and Rustichini 2000, 2). Religious punishments, such as hell and reincarnation, are often temporally remote from particular actions. A state sanction via religious legislation is more immediate.

Rational Choice and Religion

Rational choice analysis has been applied by several scholars to religious choice and the development of new religious groups (Iannaccone 1991; Montgomery 1996; Barros and Garoupa 2002; McCleary and Barro 2006). For a detailed discussion of rational choice, diverse religious markets, and religious participation, see Chaves and Gorski 2001 and Iannaccone 1995. This literature has primarily focused on the influence of state regulation and religious pluralism on religious participation in Christian-majority countries, though it has branched out into global samples.

Other scholars, however, contend that rational choice theory, though potentially relevant to other domains of behavior, is not appropriate for considering religion. Bruce (1993) contends that religious belief is not about rationality, utility maximization, or individual preferences and that commodification of religion would only make sense in a secularized society. This view is shared by McKinnon (2013). Religions are not typically testable and cannot credibly be mixed to

offset potential error, nor would believers necessarily attempt to do so. From this vantage point, “the validity of rational choice models is not a small methodological quarrel but goes right to the heart of the nature of religious belief” (Bruce 1993, 205). The rational choice predictions hold, then, by making additional assumptions “about the way religion actually works in the world” outside of the rational choice assumptions (Chaves 1995, 101). Sharot (2002) proposes that rational choice theories of religion reflect the American religious experience but do not translate to non-Western religions (i.e. Hinduism and Shinto), which are often pluralistic rather than monopolistic and have a different kind of relationship with the state. Building on Weber, he argues rational choice theories are too focused on rationality with respect to material outcomes whereas religious rationality is pursued “regardless of the costs it may involve in other aspects of life” because of the association with “cultural values” (Sharot 2002, 430). That is to say rational choice literature focuses on instrumental rationality (*zweckrational*) rather than value rationality (*wertrational*) (Weber 1978). In this case, “rationality in the sense of weighing up costs and benefits, of ends as well as means, is not relevant when the end is absolute and when the means are clearly prescribed by the religious tradition” (Sharot 2002, 432). Value-rational behaviors reflect a sense of duty, in this case religious, that will be obeyed even at a private cost (Weber 1978). Without denying that people would consider material benefits, Sharot (2002) argues that the immaterial, cultural, and traditionalist elements of rationality are underweighted in rational choice considerations of religion. This line of reasoning would suggest that religious behavior is less sensitive to legal proscriptions. Legalizing violating a religious tenet would not lead to any change in behavior among the faithful for whom the secular punishment could pale in comparison to the potential religious punishment. Traditional action, which occurs almost subconsciously due to habituation, would hardly register in a rational-choice framework as a

rational act, due to the absence of active choice (Weber 1978). Religious legislation of all laws might then be expected to have limited to no direct effect. Its potential efficacy requires dragging elements of religion under the purview of instrumental rationality. That is where the secular punishment could be effective. For a rational choice rejoinder to the perception that religion is “‘less rational’ than other aspects of culture – a sacred realm ‘set apart’ from the profane, a realm walled off from the ‘calculation of utility,’” see Iannaccone (1995, 75).

A rational choice approach to religious law is not unprecedented. Akyol (2011) argues that the punishments for some crimes specified in Islamic law, such as amputation for theft, are moderate despite their apparent severity, given the early modern contexts and a rational choice framework. Because there were no prisons and the capacity to catch a criminal was limited, the punishments needed to be severe to develop consistent compliance. Akyol’s overall argument disapproves of the state enforcement of religious law. Nevertheless, the principle that religious law has been structured with an eye to influencing subject’s behavior through punishment as well as religious devotion is well taken.

Rational choice language is regularly invoked by legislators when contemporary religious legislation is introduced or debated. For instance, blue laws, consumption laws, and abortion laws are regularly (re)considered areas of potential religious legislation. As noted above, Sabbath closing laws are common in the West and the Middle East. Enforcement of Sabbath closing laws has always been imperfect, being stronger where the communal will or religious leadership encourages the state’s agents to act (Raucher 1994). The state’s aid is argued to be necessary to protect the religious character of the community and to defend the workers against bosses, who might otherwise compel them to violate their religious beliefs (Kalman 2013; Lis 2018). This reasoning indicates that religious law is not inherently self-enforcing but that state assistance will

be useful in defending the religious observance from a cost-benefit calculation. Opponents opine that it forces them to behave more in line with the religious regulation than they otherwise would. The same is true for religious food laws. With the sacralization of cows used in developing a unified Hindu identity, consumption regulations underscore the otherness of Muslims, the British, and lower-caste and uncompliant Hindus, using the regulations and state-permitted vigilantism to discourage beef consumption and encourage concealment of the religious non-conformity (Sebastia 2016; Sarkar and Sarkar 2016). Threat of violence from the state or the community suppresses (visible) violations of the dietary codes. Additionally, while not all supporters of abortion regulations are motivated by religion, some are, and abortion regulations are included in the Religion and State Project list of religious legislation. Legislators regularly indicate that regulations placed on abortion providers will reduce abortion rates by reducing access. Some researchers question, though, whether sexual and reproductive choices are made taking these regulations into account *ex ante* (Medoff 2014; Anderson 2018). To the extent that individuals do not rationally evaluate their behavior in the legislated area prior to engaging in it, rational choice theory would be less pertinent. Whether the religious legislation influences the individual behavior as legislators believe it does, however, remains to be studied.

Testing Religious Legislation

To identify whether or not religious legislation drives individuals' related behaviors, there must be an appropriate test law. Many elements of religious law are enforced by states, but to ensure the test considers religious legislation in particular it cannot consider legislation with a strong secular reason to exist. For instance, many religions proscribe murder, but states may implement anti-murder laws because people do not want to be murdered rather than to encourage adherence to religious prohibitions. Many states place restrictions on abortion and

homosexuality, though total bans are rare, and the Religion and State Project considers these laws religious legislation. Governments, though, regularly argue in terms of state interest in citizens' health and life as well as or instead of religious obligation. The test legislation should derive as singularly as possible from religious law.

The test legislation should also not be a regulation that focuses on corporations or government agencies rather than individuals. Laws that apply to companies and government agencies are enforced at the corporate and agency level rather than the individual level. Individuals cannot readily personally violate these regulations, even if they would prefer to deviate. For instance, laws can require religious education in schools or forbid courts from issuing divorces, but the government is then regulating itself rather than individual citizens' behavior. The bulk of the population is not tasked with deciding to open a business on a given day, whether there are related laws or not, and once a business is closed even those citizens who would conduct business on a religious day have no place in which to transact it. This masks the difference between those who would and who would not observe a sabbath or holiday and obscures the regulation's effect.

Previous research has looked for an effect from legislation relating to businesses and secular groups on individual behavior measured at aggregate levels. Many studies have considered the economic and safety implications of blue laws in the United States. Few studies, though, concern themselves with the religious effect of repealing these laws, which are on a downswing in the United States (Raucher 1994). Desacralization of Sabbath days in the United States through the repeal of Sunday closing laws is found to reduce rates of religious service attendance through the introduction of alternative available activities and the compulsion to work (McMullin 2013; Gruber and Hungerman 2008). Permitting alcohol sales on Sunday in Canada

was found to increase provincial rates of alcohol consumption on Sundays, though it was somewhat offset by reduced Saturday consumption (Carpenter and Eisenberg 2009). These findings are an indication that religious legislation does matter. However, this research does not reveal the effect of laws that target the individual on those individuals.

Such a test would require individual-level data. For instance, states can proscribe alcohol or usury for religious reasons, as occurs in several Muslim-majority states. States can also ban religiously impure or prohibited foods, such as in Israel, India, and Nepal, where non-kosher and cow products are restricted respectively, or proscribe blasphemy (Fox Religion and State). Other states may, instead, attempt to forbid compliance with religious law, like Norway and Sweden's prohibition on kosher killing (Fox Religion and State). All of these actions are still feasible despite the laws. To identify an effect of legislation on individual behavior for peoples' behavior requires data on individual compliance, like individual alcohol consumption or what kinds of meat individuals consume. The availability of individual-level data is thus a limiting factor in case selection.

Test Case: Ramadan Fast Enforcement

To test the effect of religious legislation, this article looks at the effect of laws requiring observance of the Ramadan fast. Fasting for Ramadan is one of the five pillars of Islam, and restrictions based on the Ramadan fast are enforced by the state in several Muslim-majority countries. [4] Fasting is done by the individual, and states have no secular reason to compel daytime abstention from food, drink, and smoking for one lunar month a year. Although Islamic law proposes that violators will be subject to post-mortem punishment for failure to fast, Islamic law does not mandate any temporal punishment to be enforced by the government or the Muslim

community. As such, any punishment the state chooses to enforce is an independent decision on the part of the regime.

Ramadan is an important religious occasion in Islam and in the Muslim world. It reflects a qur'anic injunction to commemorate the transmission of the Qur'an to Muhammad (2:185-187), though it is also used now to remind the public of the poor and their suffering (Jomier and Corbon 1956; Buitelaar 1993). Several anthropological and sociological studies have examined fasting behavior in practice; only a few are discussed here due to space constraints. Jomier and Corbon (1956) note in their discussion of Egypt that Ramadan is so culturally prevalent in the Muslim world that even those who are not fasting – within Islamic law dispensation or not – do not escape its presence. Frankl (1996) describes the practice in Swahili-Land, including the changes in dress, acts of charity, and the skeptical treatment of fasters who do not otherwise regularly perform religious rituals. Benkheira (1986) describes the popular association of Ramadan with dominant groups in Algeria; the fast is for parents, the elderly, police, judges, owners, and the privileged. Only those in marginal positions, like the youths, would violate it, and they would have to do so in a private space to avoid condemnation. Buitelaar (1993, 3) describes Moroccan women's pre-Ramadan preparations and Ramadan experience and their focus on ideas of "*umma*, Islamic community; *tahāra*, purity; and *ajr*, religious merit" in their fast. Buitelaar (1993, 78) references Morocco's fasting law, noting that her interlocutors "proudly told" her about the potential incarceration or beating of violators. Although the law exists in many countries, Bennani-Chraïbi (2000) suggests that even Islamists in Morocco view it as a particularity of that country; she notes that some Moroccans travel during Ramadan to avoid their state and religious legal duties, as Islamic law exempts travelers. Tobin (2016) reports that the Jordanian public assists the government in upholding the restrictions on public consumption

during Ramadan; those who do not fast are encouraged to conceal it, even if it is legally permitted non-fasting, out of respect to those who do fast. Scholars have also reported on fasting practices, preparation rituals, and adjustments to the social order associated with Ramadan in other countries, from Bosnia to China. The variety shown here, though, should demonstrate the pervasiveness of Ramadan as a religious and sometimes legal institution in the Muslim world and in the academic study of religion and religious behavior.

There are several personal and country-specific characteristics that could influence behavior in a particular case. For instance, has the individual been pregnant or ill? Was she travelling? Islamic law grants such exemptions to the fasting requirements. For the years in which studies were done, Ramadan occurred between July and September. Was it unusually hot in their country that year? Did the fast coincide with a major event, like a national holiday or the World Cup, or did their town or family make a special occasion of the fast itself? The survey asks generally about whether the respondent fasts during Ramadan, rather than if they fasted to any particular extent during the most recent Ramadan. Their behavior during recent Ramadans, though, could inform their understanding of their own conduct. It is necessary to be cognizant, however, that the models could not and are not expected to account for all behavior. They are intended to identify a general effect of state policy. It would be unreasonable to expect the law to be a singular determinant of behavior, which has other drivers, and it is also evident both from enforcement and from respondents who report that they did not observe the fast that the Ramadan fast is violated even with the threat of state enforcement. The question is whether the religious legislation increases the propensity, not whether it perfectly or singularly determines it.

Data

The primary data for this study comes from two surveys conducted by the Pew Research Center. [5] The first, which was conducted in 2008 and 2009, focused on religion and tolerance in Sub-Saharan Africa. The second, which was conducted in 2011 and 2012, focused on religion, politics, and society in countries with sizable Muslim populations. In-person interviews of nationally-representative samples were conducted in Africa, Asia, and Europe. [6] The two datasets are combined for this project. After subsetting the first sample for Muslims, as the second dataset only includes Muslims and only Muslims were asked about their Ramadan behavior, the sample contains 33,858 cases from thirty-eight countries. [7] The test was also conducted using only Muslim-majority countries' data. That sample contains 27,078 cases from twenty-four countries. [8]

A variable is added identifying countries that punish failure to observe the Ramadan fast. In some countries, the Ramadan fast is expressly mentioned in the penal code. In others, regulations, such as laws concerning insulting Islam, are interpreted to require observance. Reports of enforcement and proactive government warnings are used to identify such cases. The enforcing states in the survey sample are Jordan, Morocco, Nigeria, Pakistan, and the Palestinian Territories. The regulations are applied to public violations of the fasting requirements; in some countries, like Morocco, the law explicitly only applies to public actions. The ability to eat, drink, or smoke in private creates opportunities to deviate from Islamic law without violating or triggering the governments' law; this means that the law can be enforced without all Muslims' observing the fast. In the countries in the sample, the potential punishments are fines and/or incarceration that could range from one month to two years. Incarceration is a substantial punishment in terms of lost liberty, which is valuable. The fines, though they may seem small in US dollars (i.e. twenty to fifty dollars), in the context of GDP per capita for some of these

countries, are not; it would be akin to a five hundred dollar fine. [9] For this project, a Ramadan fast law is measured with a binary indicator of legal enforcement or not. In equilibrium, a law is obeyed rather than enforced, because the punishment is set to a level that would prevent deviation whether through direct deterrence or because personal and/or social conditions keep the threat of deviation low regardless. As such, the specifics of the punishment would not induce substantial variation between cases.

A list of countries with a formal enforcement protocol could be construed as sufficient to document the effect of religious legislation. However, the incentives that shape citizens' behavior are not limited to what the government has formally announced as its intention to do or its permission to its agents to do. State authority can also create incentive structures without a formal rule, such as by having police raid restaurants and arrest fast violators, sometimes with local government sanction, on the pretext of Ramadan fasting law violations but not ultimately formally charging them because there is no actual law requiring compliance. It is unrealistic to expect citizens to be intimately familiar with the penal code or to make their rational or reasonable calculations based solely on such laws; they could reasonably rely on police actions to inform their legal understanding and their sense of how likely they are to be punished for the "crime" of violating the Ramadan fast. Seeing the "law" enforced would then similarly influence their behavior as if the police action were properly intended and approved by the government. Any "fines" paid to avert arrest or detentions until prosecutors confirm the activity was not actually illegal mirror the official punishments in formally-enforcing states, if potentially at lower levels. Egypt and Tunisia are the states in the sample that have experienced such unofficial enforcement ("Furore" 2009; Hlaoui 2014). An official Ramadan fast enforcement law was proposed in Tunisia, but it was not enacted (Sadek 2013). An official punishment, including a

fine and/or up to a month in jail, was instituted in Egypt after the time of this survey (Suleiman 2016). [10]

Whether the respondents observed the Ramadan fast is a binary indicator for their response to the question “Do you fast, that is avoid eating during the daytime, during the holy month of Ramadan?” Only Muslim-identifying respondents were asked this question. Some countries, like Saudi Arabia and Bahrain, expect non-Muslims to observe the fast as well, at least in public, while others, like Morocco, do not, but no data is available on the behavior of non-Muslims. Overall, observance rates for the Ramadan fast are variable, with the highest rates occurring in South/South-east Asia and Africa and the lowest rates occurring in Europe and Central Asia. High rates of fasting occur in countries with and without laws enforcing the Ramadan fast.

As with any survey, it cannot be guaranteed that no respondent lied in answer to this question as a form of preference falsification (Kuran 1995). If respondents felt it were more socially acceptable to be religious, they might overestimate their compliance. For instance, church attendance rates in the US are often overstated (Presser and Stinson 1998). In this case, though, respondents would likely overstate religiosity generally rather than overstate with regard to a discrete action. Overstated fasting and prayer rates could move in tandem, maintaining any apparent religiosity motive. Alternatively, general religiosity, in the form of prayer, could be overstated while fasting, which has many Islamic legal exemptions, may not be similarly overreported; in this case, the influence of the law relative to personal religiosity could be understated. It should be noted that desirability is separate from criminality. As noted above, the regulations require witnessed violations of the laws on fasting or respect for Islam. Retrospective reports of not fasting, which, due to religious legal exemptions, do not all violate Islamic or state

Table 1: Ramadan Enforcement and Observance Rates

Country	National Rate of Ramadan Fast Observance among Muslim	Ramadan Fast Law
Afghanistan	96	
Albania	44	
Azerbaijan	43	
Bangladesh	96	
Bosnia and Herzegovina	75	
Cameroon	100	
Chad	98	
Democratic Republic of Congo	69	
Djibouti	88	
Egypt	95	*
Ethiopia	96	
Ghana	97	
Guinea Bissau	85	
Iraq	94	
Jordan	86	X
Kazakhstan	30	
Kenya	96	
Kosovo	76	
Kyrgyzstan	53	
Lebanon	88	
Liberia	89	
Malaysia	99	X
Mali	93	
Morocco	98	X
Mozambique	86	
Niger	95	
Nigeria	96	X
Pakistan	97	X
Palestinian Territories	94	X
Russia	56	
Senegal	98	
Tajikistan	88	
Tanzania	93	
Thailand	100	
Tunisia	96	*
Turkey	84	
Uganda	85	
Uzbekistan	50	

*(Semi-official) Enforcement occurs although the law does not formally sanction this behavior
Source for national rates: Pew Research Center (2012)

law, do not expose the respondent to criminal penalty. Furthermore, media reports during Ramadan, several of which are cited here, include interviewees who freely admit to eating, drinking, or smoking, whether or not the laws exist; they may still pretend to their mother, but they will admit it to others. This suggests little popular concern with regard to social desirability with strangers or retroactive enforcement. If desirability were potentially stronger in some states because of social religiosity, the states that were more likely to have the legislation, weighting that accounts for those characteristics would also account for different levels of desirability. The results, as will be discussed, are robust in relation to that weighting. Additionally, the survey questions were pretested by the Pew Research Center, and sensitive items were removed on a per country basis; this question was not removed for sensitivity in any country. It might be considered sensitive in China, where Muslims can be punished for observing the fast. However, the Pew Research Center excluded from the sample countries in which an Islam-focused survey was too sensitive, including China and India. Respondents who wished could also skip any question. Only one percent of the sample skipped the Ramadan question. Assuming that non-fasters were more likely to skip the question, the models were rerun including those cases as non-fasters; the results were not substantively changed. The results were also not substantively different if that one percent were all coded as observant. Nevertheless, the potential for inaccurate reporting is a reminder that point-estimates are measured with potential error.

In addition to the potential effects of religious legislation, individuals' behavior is influenced by personal and social characteristics and circumstances. As such, it is necessary to control for those characteristics using other elements of the survey. Personal and social insecurity have been found to increase individuals' propensity to believe in God (Kay et al 2010), and economic development has been argued to reduce religious service attendance by addressing

existential insecurity (Norris and Inglehart 2004). A similar pattern could apply to Ramadan fasting behavior. To account for these effects, the study controls for the subjects' assessment of their personal economic circumstances and the national economic condition. Higher scores indicate a worse perceived economic condition. Age and gender are included, as previous research identifies age and gender effects in rates of prayer and service attendance (Ehrenberg 1977; Loewenthal, Macleod, and Cinnirella 2002). Gender is a binary indicator for female. Age is measured in five-year increments from 18-24 (1) to 60+ (9) based on the surveys coding system. City-dwelling is incorporated in a binary indicator. Individual religiosity is also included, as pious individuals have more independent reason to comply with religious law, namely that they are fasting out of religious devotion. A measure of how frequently the individual prays, with higher scores indicating more frequent prayer, is used to account for personal piety.

The religious market theory proposes that in environments with greater religious freedom, the variety of interpretations that develop result in higher levels of religious satisfaction and religious participation. Countries with higher levels of regulation of religion show lower levels of religious participation (Iannaccone 1991; Chaves and Cann 1992; Fox and Tabory 2008; McCleary and Barro 2006). Established religion, used as a measure of state subsidy separate from regulation, increases attendance (McCleary and Barro 2006). Fox and Tabory's (2008) study of the effect of regulation identifies a negative effect of increased levels of national religious legislation on national rates of religious service attendance, although national religious belief rates are not shown to be impacted by the pervasiveness of religious legislation. Their test includes an index of thirty-three pieces of religious legislation that a state could enact, but it does not include the Ramadan fast. This metric is distinct, though, from examining the effect of a

particular piece of legislation on the targeted behavior. This study controls for respondents' perceived levels of freedom to practice Islam in the country. On a four-point scale, respondents indicated that they were "very free" to "not at all free" to practice their religion in their country. Respondents were also asked about levels of regulation for other religions, but those levels are not included here. Higher scores indicate greater levels of regulation.

Results

The effect of religious legislation is tested using a binary logistic regression multi-level mixed-effects model to account for the fact that individuals are surveyed and laws are instituted within countries. Positive values mean that the variable increases citizens' propensity to fast during Ramadan. As noted, the effect is tested both in the full sample and a Muslim-majority country sample.

The results show a positive effect from Ramadan fast laws on fasting behavior, which means that, on balance, living in a state with Ramadan-enforcing laws increases individuals' propensity to fast for Ramadan (Table 2). The effect of the legislation does not obtain traditional levels of significance when looking only at the official or legal enforcement of the legislation (Model 1 ($p < .23$) and Model 3 ($p < .18$) of Table 2); this means that the law has a positive effect on likelihood of fasting, but confidence in that effect is lower in those cases. The size of the effect is greater in Muslim-majority countries (Models 3 and 4 of Table 2) than in the full sample (Models 1 and 2 of Table 2).

Within both the full sample and the Muslim-majority country sample, the effect of regulation is stronger when the unofficial or illegal state enforcement is included in the measure of religious legislation (Models 2 and 4 of Table 2). Enforcement's effect here reaches traditional

Table 2: Binary Logistic Regression Models

	Model 1	Model 2	Model 3	Model 4
(Intercept)	0.61*** (0.23)	0.53** (0.23)	0.58** (0.29)	0.45 (0.29)
Fasting Law	0.69 (0.57)	0.91* (0.48)	0.89 (0.67)	1.15** (0.55)
Religious Freedom	-0.15*** (0.03)	-0.15*** (0.03)	-0.17*** (0.03)	-0.17*** (0.03)
National Economic Condition	-0.02 (0.03)	-0.02 (0.03)	-0.00 (0.03)	-0.00 (0.03)
Personal Economic Condition	-0.02 (0.03)	-0.02 (0.03)	-0.05 (0.03)	-0.05 (0.03)
Female	0.10** (0.04)	0.10** (0.04)	0.11** (0.04)	0.11** (0.04)
Age	0.00 (0.01)	0.00 (0.01)	0.02*** (0.01)	0.02*** (0.01)
Urban	-0.16*** (0.04)	-0.16*** (0.04)	-0.09* (0.05)	-0.09* (0.05)
Frequency of Prayer	0.39*** (0.01)	0.39*** (0.01)	0.36*** (0.01)	0.36*** (0.01)
AIC	18264.72	18262.80	14569.26	14566.90
Log Likelihood	-9122.36	-9121.40	-7274.63	-7273.45
Num. obs.	33858	33858	27078	27078
Num. groups: Country	38	38	24	24
Var: Country (Intercept)	1.39	1.31	1.46	1.32

***p < 0.01, **p < 0.05, *p < 0.1

levels of significance. The public is responding to the police action even if the police are actually not supposed to be using the state's power for that enforcement.

Logistic regression coefficients are more readily interpretable in terms of changes in predicted probability. Based on the full sample, official enforcement increases the predicted probability that an individual will fast during Ramadan by 12.5 percentage points. When considering all enforcement, the predicted probability of fasting increases by 15.8 percentage points. In the Muslim-majority state sample, official enforcement increases the predicted probability that an individual will fast during Ramadan by 15.9 percentage points. When

considering all enforcement, the predicted probability of fasting increases by 20.6 percentage points.

The results also show that women and rural residents are more likely to fast, which is consistent with previous research. Rather intuitively, more religious individuals, those who pray more frequently, are more likely to abide by the religious precept of fasting during Ramadan. Fasting is also less likely for respondents who identified greater levels of regulation of Islam in their country.

Methodologically, it is useful to address the concern that assignment of the treatment, the existence of the law, is not random. Citizens who are subject to this law may be in different environments from those living in countries without the religious legislation. Weighting is used to mitigate this concern. Observations are weighted so that the enforcing state (treated) populations and non-enforcing state (untreated) populations are balanced on characteristics that could influence propensity to enact religious legislation. In this case, those characteristics are the countries' post-communist status, Muslim population share, national prayer rate, and whether the country has an established religion.

Because of the anti-religious sentiments of Communist regimes, previously communist societies are both less likely to have religious regulations and more likely to have subjects who do not to participate in overtly religious behavior (Froese 2004). Additionally, generally religious environments would reasonably be more likely to have religious legislation. Consider the expressive function of law. Expounded by Sunstein (1996, 2024), the expressive function of law refers to “the function of law in ‘making statements’ as opposed to controlling behavior directly.” He notes that “sometimes people support a law, not because of its effects on norms, but because they believe that it is intrinsically valuable for the relevant ‘statement’ to be made”

(Sunstein 1996, 2026). In a devout society, there is a greater likelihood of wanting to express religious values in the law and to express a social value for complying with religious law. States with established religions also have a greater incentive to express religious values in law, since they have already identified the state with that religion. States with established religions are significantly more likely to have other forms of religious legislation (Fox 2011), so it is possible that they are more likely to have Ramadan fast enforcement laws. Balancing on these factors reduces the differences between the treated and untreated groups and their potential impact on the treatment's apparent effect.

Post-communist status is a binary indicator. Muslim population share is the percentage of the country's population that was Muslim in 2010, between the two waves of the survey (Pew Research Center 2011). The national prayer rate was computed by the Pew Research Center from these surveys; it is the share of the population that prays at least daily (Pew Research Center 2012). Religious establishment is based on the Constitute Project's official religion variable "offrel" (Elkins, Ginsburg, and Melton 2017).

In the weighted full sample for only official fasting laws, there are 5,404 treated cases and an adjusted 16,165.25 control cases. Weights range from zero to one. In the weighted full sample for all enforced fasting laws, official and unofficial, there are 8,521 treated cases and an adjusted 7,373.46 control cases. Weights range from zero to 1.74. In the weighted Muslim-majority sample for only official fasting laws, there are 4,614 treated cases and an adjusted 9,133.50 control cases. Weights range from zero to 1.03. In the weighted Muslim-majority sample for all enforced fasting laws, official and unofficial, there are 7,731 treated cases and an adjusted 7557.97 control cases. Weights range from zero to 1.65.

Taking these factors into account, the religious legislation is still a positive influence on individuals' compliance with religious law, following a similar pattern to the original models (Table 3). The effect is stronger in the Muslim-majority countries sample (Models 3 and 4 in Table 3). The effect of the Ramadan fasting law is also stronger in the models that consider both official and unofficial enforcement (Models 2 and 4 in Table 3).

Table 3: Weighted Binary Logistic Regression Models

	Model 1	Model 2	Model 3	Model 4
(Intercept)	1.17*** (0.40)	0.68* (0.35)	1.08*** (0.40)	0.37 (0.33)
Fasting Law	0.59 (0.49)	0.93** (0.47)	0.91 (0.56)	1.39*** (0.47)
Religious Freedom	-0.09 (0.11)	-0.32*** (0.06)	-0.20** (0.10)	-0.31*** (0.06)
National Economic Condition	0.02 (0.09)	0.16*** (0.06)	0.06 (0.08)	0.13** (0.05)
Personal Economic Condition	-0.27*** (0.09)	-0.17*** (0.06)	-0.16** (0.08)	-0.16*** (0.06)
Female	0.30** (0.14)	0.19** (0.09)	0.30** (0.13)	0.13 (0.08)
Age	0.05* (0.03)	0.01 (0.02)	0.04 (0.03)	0.01 (0.02)
Urban	-0.09 (0.14)	-0.19** (0.09)	-0.21 (0.15)	-0.22** (0.09)
Frequency of Prayer	0.33*** (0.04)	0.37*** (0.02)	0.28*** (0.03)	0.38*** (0.02)
AIC	1836.99	4580.72	2069.35	4764.26
Log Likelihood	-908.49	-2280.36	-1024.67	-2372.13
Num. obs.	33858	33858	27078	27078
Num. groups: Country	38	38	24	24
Var: Country (Intercept)	0.90	0.95	0.89	0.89

***p < 0.01, **p < 0.05, *p < 0.1

Changes in predicted probability are again useful. Based on the full sample, official enforcement increases the predicted probability that an individual will fast during Ramadan by 8.9 percentage points. When considering all enforcement, the predicted probability of fasting

increases by 16.5 percentage points. In the Muslim-majority state sample, official enforcement increases the predicted probability that an individual will fast during Ramadan by 13.2 percentage points. When considering all enforcement, the predicted probability of fasting increases by 25.6 percentage points.

In the weighted models, individuals with a negative evaluation of their own economic condition are less likely to fast. Where both official and unofficial enforcement are taken into account, those with a negative view of the national economic condition are more likely to observe the Ramadan fast. Urban residents are less likely to fast. Women are more likely to fast, as are more religious individuals, as measured by frequency of prayer. Citizens who identify greater levels of restriction on religion in their country are less likely to fast for Ramadan.

Discussion

The final results show that state religious legislation significantly increases citizens' propensity to fast during Ramadan, particularly when the full scope of enforcement, both official and unofficial, is taken into consideration. They also show that individuals in environments with greater freedom for their religion are more likely to fast. This element of the results is consistent with religious market theory. In this sense, regulation *qua* regulation is not suppressive, since the regulation in favor of compliance encouraged compliance, but regulations that makes citizens feel their religion is restricted do discourage religious participation and engagement.

The significance and direction of the effect are inconsistent with the idea that these laws are mere expressions of value without substantive impact on behavior. Citizens are also not unresponsive to the regulations, nor is the effect of the legislation small, even in the models weighted to account for the religiosity of the community overall. These findings suggest that religious legislation it is not a pure expression of popular religiosity with no substantive impact

once communal and personal religiosity are incorporated. These laws may well manifest from the conversion of popular will based on religious sentiments into law and a desire to compel obedience with the normatively preferred behavior. The laws, however, have an effect that is distinct from the popular and state affiliation with religion that makes such laws more likely.

The nature of the legislation in question argues against their being “prices,” as does the potential punishments. Also consistent with that assessment is that the results do not show citizens decreasing their participation in the face of the legislation, indicating they are not treating the punishments as the price to pay for free choice. This increased compliance in the face of punishment is, however, consistent with punishments serving as effective sanctions for non-compliance that influence behavior in favor of religious observance for rational subjects.

Conclusion

Although governments’ propensity to enact legislation mandating compliance with elements of religious law or religious observance is globally widespread, research has done little to date to demonstrate that these laws are actually affecting citizens’ behavior. The rational choice theory of law certainly expects that they would matter. The sanctions they impose on citizens – as opposed to low-level prices – should encourage rational actors to comply more, because the punishment the state will exact should they choose not to do so is offsetting any pleasure they gain from violating the religious precept.

This article tests this principle with respect to the effect of religious legislation on individual behavior. Although religious legislation is widespread, there is no data on individual conformity with the laws in the vast majority of cases. Some legislation targets parts of the government itself; some targets companies. For others, compliance is not regularly measured. As a test case, this article focuses on individuals’ decision to observe the Ramadan fast, a pillar of

Islam that receives state enforcement in many Muslim-majority countries. Using survey data from Muslims in Europe, Africa, and Asia, it finds that the exercise of state power in favor of fasting increases citizens' propensity to observe this element of Islamic law in the broad sample and in Muslim-majority countries. This relationship holds even after accounting for the fact that some states are more likely to have religious legislation than others due to features like the population's religiosity, previous experience with Communism, and an established religion. Because only Muslims were asked about their Ramadan behavior, this study cannot speak to the effect of such legislation on non-Muslim-identifying individuals. While this study only tests one behavior and one type of religious legislation, this example is a strong indication that religious legislation is not merely expressive and does not cause subjects to decrease their related religious participation.

As noted, this area of research is limited by data availability. There are many other cases of religious legislation that apply to the individual, such as alcohol and food sale and consumption restrictions and restrictions on lending at interest. Information on individual compliance with these religious and state laws, however, is lacking. Identification and testing of additional cases of religious legislation would improve the present understanding of the effects of religious legislation.

Other elements of religious legislation are also ripe for additional exploration. Little is known about states' reasoning for the introduction of these types of laws. How are the laws selected, and what circumstances, foreign and domestic, make them more or less likely to be adopted? Given that the laws exist, why do they persist in democratic countries, including secular states? Is it a lack of will to change or repeal the laws? Alternatively, do the laws actively receive public support or would they in the face of opposition? States' propensity for

enforcement of these widespread policies also merits further examination. These laws, as with all laws, are not perfectly enforced and enforcement is not without cost to the state. When and why is such legislation actually enforced? Building the empirical understanding of this element of state regulation of religion and individual behavior will give greater insight into the nature of church-state relationships.

Notes

[1] The Religion and State Project is a dataset documenting the relationship between all major religious traditions and countries around the world with populations over 250,000 from 1990 and 2014. The 3rd round of data was released in 2017. It includes information on the level of integration or separation of religion and the government, discrimination against religious minorities, restrictions placed on religious observance and institutions, restrictions places on religion's involvement in politics, and religious legislation.

[2] Fox and Sandler's (2005) sample for Western democracies includes North American and Oceanic states, but it is heavily weighted towards Western Europe.

[3] Arguably some policies that are included in the Religion and State Project's list of religious legislation, which is used in Fox and others' work, are not state efforts to enforce religious law. For instance, states could have secular reasons to place some restrictions on the sale of alcohol or abortion, and it is not incontrovertible that the presence of a religious symbol on the national flag is enforcing a religious precept. The list also does not include some religious precepts that it might, such as the Ramadan regulation considered in this research. Nevertheless, the list of documented regulations is diverse and substantial if not exhaustive.

[4] These countries are Algeria ("Algerian" 2010; U.S. Department of State 2009), Bahrain (Halligan 2014; "Bahrain" 2012), Brunei Darussalam (Begawan 2015), Comoros (Fox 2015), the

Gambia (“Gambia” 2015), Indonesia (Fox 2015), Iran (“Iran” 2016), Jordan (Fox 2015; Tobin 2016), Kuwait (Kuwait 2016; Trenwith 2014), Malaysia (Fox 2015), the Maldives (Fox 2015), Morocco (Ministère 2018), Nigeria (Fox 2016; Zango 2016), Oman (Oman 1974), Pakistan (Shams 2015; “Pakistan” 2015), the Palestinian Territories (Miller 2012; Kuttab 2016), Qatar (Khatri 2015), Saudi Arabia (“Saudi” 2016), and the United Arab Emirates (Fox 2016).

[5] The Pew Research Center bears no responsibility for the analyses or interpretations of the data presented here.

[6] The exception is Thailand, where a Muslims-only survey was fielded in five southern provinces. Muslim populations were oversampled in addition to the nationally representative samples in Bosnia-Herzegovina, Ghana, Kenya, Russia, and Uganda. The Chad and the Democratic Republic of the Congo surveys were disproportionately urban. The Pew Research Center’s summary of the results have appeared in several reports: “Tolerance and Tension: Islam and Christianity in Sub-Saharan Africa” (2010), “The World’s Muslims: Unity and Diversity” (2012), and “The World’s Muslims: Religion, Politics and Society” (2013). More information on the survey methodology can be found in these reports.

[7] Four of the Sub-Saharan African countries (Botswana, Rwanda, South Africa, and Zambia) were removed because of an insufficient Muslim sample. While surveys were conducted in Algeria and Iran, they are not included in the Pew Research Center’s own publications on its survey findings. As such, they are removed from this sample because of concerns about the data quality. Indonesia is also removed from the sample because the Ramadan fast is only enforced in Aceh, and the Pew Research Center removed information on respondents’ geographic region to protect the survey respondents’ anonymity.

[8] Afghanistan, Albania, Algeria, Azerbaijan, Bangladesh, Chad, Djibouti, Egypt, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kosovo, Kyrgyzstan, Lebanon, Malaysia, Mali, Morocco, Niger, Pakistan, Palestinian Territories, Senegal, Tajikistan, Tunisia, Turkey, and Uzbekistan.

[9] This approximation reflects a 25 dinar fine in Jordan and the 200 to 500-dirham fine range in Morocco relative to their respective GDP per capita. Others, like the 2000 dirham fine in the United Arab Emirates are directly equivalent to more than 500 American dollars, despite the lower GDP per capita.

[10] Incidences of violence from Taliban militants against civilians who do not observe the Ramadan fast have been reported (“Taliban” 2016). However, as the Taliban is not the government or government agents for Afghanistan, it is not treated as a case of state enforcement for this analysis.

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