

# Islamism, Religiosity and Fertility in the Muslim World

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## Abstract:

Religious politics, in which there is a dominant cleavage separating believers (especially if literalist) from moderate believers and nonbelievers is important in Muslim countries in the Middle East, Africa and Asia. Will Muslim societies become secular or continue to become more religious? Within the religious majority, are Islamists (supporters of Shari'a Law) more fertile than non-Islamist Muslims? How are these trends affected by modernization? Social scientists have not been very attentive to the role that demography - notably fertility and migration - plays in the secularization/religious revival story. Work on religious fertility in Muslim countries is particularly scarce. This paper summarizes existing work, then analyzes data from the World Values Survey of 1999-2000, supplemented by the Youth, Emotional Energy, and Political Violence survey of 2005 in Egypt and Saudi Arabia. It performs multivariate analysis on three dependent variables: fertility, Islamism and religiosity, to provide a glimpse into the demographic future of Islamism, moderate Islam and secularism in the Muslim world.

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The balance between secular and religious subcultures has important repercussions for politics. This divide affects electoral cleavages, party systems, public policy and international relations. It also informs theories of secularization and modernization more generally. It therefore becomes important to understand the likely future trajectory of religious population composition in a country, and in the world. Here we are principally concerned with differences of religious intensity *within* faiths rather than ethno-sectarian differences *between* religions.

### Demographic Aspects of Religion

Much research on the sociology of religion has focused on religion as a social phenomenon whose rise or decline depends upon the conscious choices of individuals within changing structural contexts. However, it is apparent that even in the absence of socially-inspired revivals/declines of religion, the degree of religiosity in a society can fluctuate. The chief non-social mechanism of change is demography. If we consider 'the religious' as a population affected not only by assimilation/dissimilation into the secular population but by migration, fertility and mortality, we arrive at a more multivalent picture. David Voas is one sociologist who has urged that greater attention be paid to the use of demographic methods in the study of religion. 'People enter, exit, and move within religion,' he remarks, 'just as they are born, will die, and migrate, in life'. (Voas 2003: 94) For Michael Hout, 'demography helps shape the religious landscape ... The combination of differing demography and stable intergenerational religious socialization would be sufficient to equalize or even reverse the relative sizes of the religions.' (Hout 2003: 79-80). 'Silent' demographic effects can be profound in the long-term. For example, Rodney Stark shows how early

Christians' favourable fertility and mortality rates as compared to Hellenistic pagans helped to fuel a 40 percent growth rate in the Christian population of the Roman Empire over several centuries. This gave rise to a population increase from 40 converts in 30 A.D. to 6 million by the year 300 leading to a 'tipping point' which helped Christianity become institutionalised within the Empire. (Stark 1996)

Currently, many Islamic parts of what was once the Roman Empire have seen major declines in their Christian and Jewish populations due to emigration, lower fertility and mixed marriages. (Fargues 2001)

This context is extremely relevant today, because an important postulate of second demographic transition theory is that values are increasingly linked to fertility behaviour as societies modernise. (Surkyn and Lesthaeghe 2004; van de Kaa 1987)

Several studies have recently examined the connection between religiosity - whether defined as attendance, belief or affiliation - and fertility in Europe. Most find a statistically significant effect even when controlling for age, education, income, marital status and other factors. (Adsera 2004: 23; Frejka and Westoff 2006; Berghammer, Philipov and Sobotka 2006)

Traditionally, education was seen as the key determinant of a woman's fertility rates. Yet in many of these European studies, a woman's degree of religiosity is as or more important than her level of education in determining the number of children she will bear over a lifetime. In Spain, women who remain practicing Catholics are now considerably more fertile than their non-practicing sisters, which wasn't the case as recently as 1985. This is probably because only those truly committed to religion remain attenders while nominal Catholics have dropped away. Since the more religious are more fertile, the departure of social or uncommitted attenders helps unmask the connection between religiosity and fertility.

In France, researchers find that fertility rates actually rose substantially among

generations of practicing, native-born Catholic women born after 1950 while rates for non-practicing and nominal Catholics remained flat or declined. Among French women born in 1960, there is a half-child difference in fertility between practicing Catholics and nonpracticing Catholics. The authors estimate that religious decline in France accounts for 15-18 percent of fertility declines across birth cohorts. (Regnier-Loilier and Prioux 2008) American research also suggests a significant link between various measures of religiosity (congregational participation, denomination) and fertility. Participation in congregational groups is especially important. (Hackett 2008) Individual-level relationships are reproduced through compositional effects at the state level, hence higher fertility in states with large Mormon, evangelical Protestant or Hispanic Catholic populations. (Hout, Greeley and Wilde 2001; Lesthaeghe and Neidert 2005).

Little attention has been paid to religiosity and fertility in Islam, mainly because of limited data. In this paper, we identify two sets of Muslim demographic dynamics. The first operates at the macro level, involving Islamist governments and political actors enacting policies which restrict access to family planning while exhorting their populations to have more children. This kind of politics has delayed the onset of demographic transition in certain cases, but appears to be largely giving way before more secular *raisons d'etat*. That said, support for family planning in the Muslim world cannot be taken for granted and faces Islamist challenges in certain areas. The second form of Islamist fertility appears on the micro level, and seems likely to grow more important as Muslim societies modernise and move through their demographic transition. This involves Islamist individuals who have full access to family planning and urban material incentives not to have excess children choosing to have larger families than non-Islamist Muslims. In this respect, Muslim trends seem

similar to those glimpsed in the Judaic and Christian world. However, in contrast to the United States, individual-level behaviour has not yet manifested itself in state-level fertility differences.

### Patterns in the Muslim World

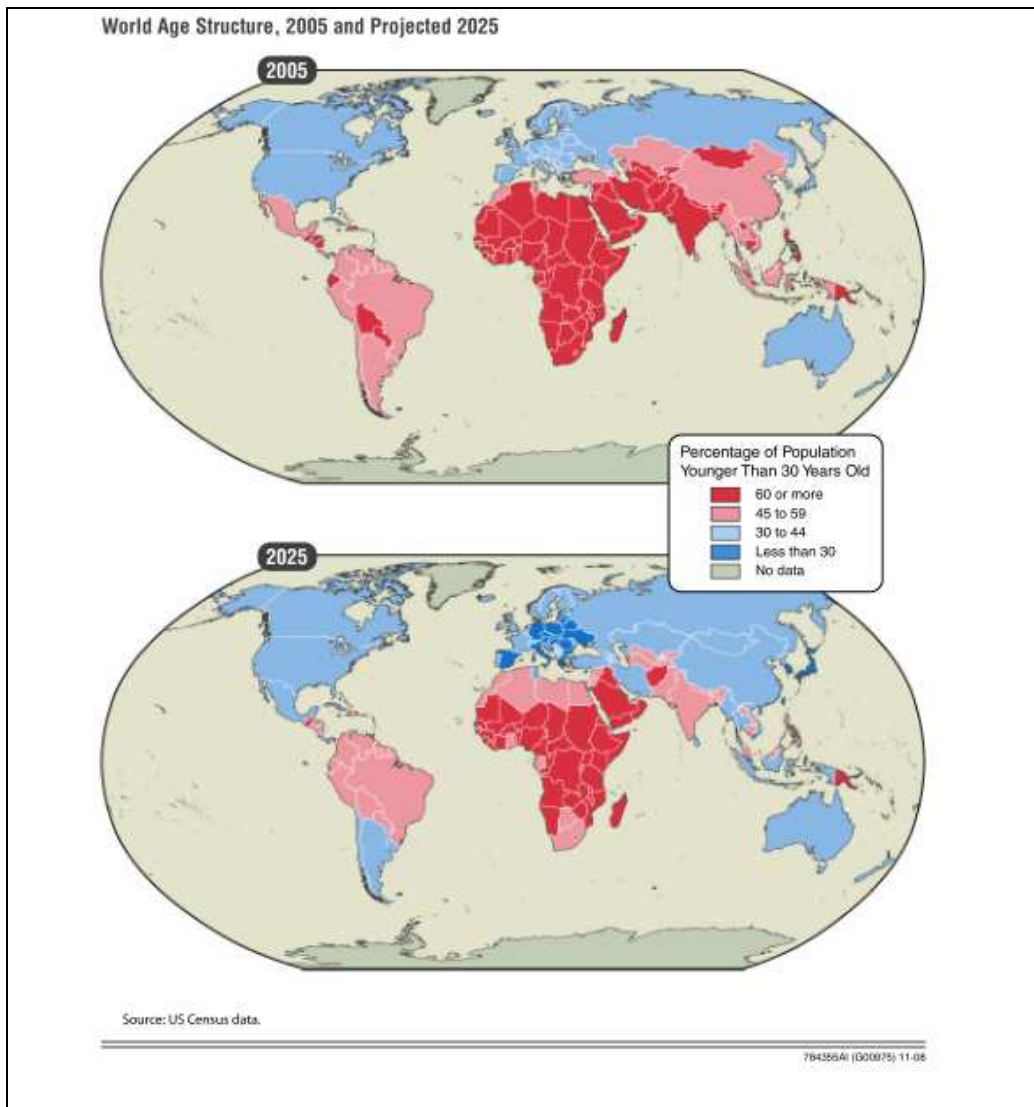
Islam is the second most popular world religion after Christianity. Its 1.2 billion adherents largely live in an arc of societies stretching between 15 and 45 degrees N, to the south and southeast of Europe. The World Christian Database estimates that Islam has been the world's fastest growing major religion of the last hundred years. Between 1900 and 1970, the proportion of the world's population that is Muslim expanded from 12.3 percent to 19.6 percent. In the same period, Christianity declined from 34.5 percent to 33 percent. The authors calculate that Muslim natural increase was nearly double that of Christianity, allowing it to outpace Christianity despite the fact that Islam only converted a third as many people to its cause. (Johnson and Barrett 2004) Much of Islam's phenomenal growth can be accounted for by the fact that Muslim regions of the globe happened to grow faster due to underdevelopment, as measured by low education, industrialisation, urbanisation or limited access to contraception. Consider trends in the main Muslim regions. The Arab world's population alone has grown from 80 to 320 million in the past fifty years and half its population is under 20. Europe's 'southern hinterland' of Muslim and sub-Saharan African countries, which equalled the EU-25 in population in 1950, outnumbers it 3:1 today and will outnumber it 7:1 by 2050.

In some cases, conservative Islam delayed the onset of secular demographic processes, raising fertility. In Jack Goldstone's words, 'Some countries – mainly those

with large Muslim populations – have been quite resistant to a reduction in birth rates; thus their population growth rates have remained high.' (Goldstone 2007) Pakistan is an interesting case, because it contrasts markedly with poorer Bangladesh next door. In Pakistan, religious authorities resisted birth control more than Bangladesh, whose brand of Islam is less puritanical. The result is that Pakistan's population will hit 467 million by 2050, 188 million more than if it had adopted a Bangladeshi-style programme from the 1970s. (Cleland and Lush 1997) In Pakistan, 40 percent of the population is under 14. Total fertility rates in Somalia, Afghanistan, Yemen and the Palestinian Territories, for example, exceed 5 children per woman. (Jenkins 2007: 8, 21; Fargues 2000)

Yet these cases may be exceptional. In fact, we have strong evidence that Muslim fertility may be heading the way of once-famous Catholic fecundity. Turkey, Algeria, Lebanon and Tunisia now have below-replacement fertility rates, part of a longer-term demographic transition which emerged in the late twentieth century. (Jenkins 2007: 21) Libya, Egypt, Indonesia and Malaysia are moving in the same direction. In fact, Muslim Asia and the Middle East/North Africa region is more mature than sub-Saharan Africa, and moving smartly through its demographic transition. High-fertility Muslim (or part-Muslim) countries tend to be exceedingly poor. Most, like Somalia or Uganda, lie in the high fertility zone of Africa north of South Africa/Botswana and south of the Sahara. (See figure 1)

**Figure 1. World Age Structure, 2005 and 2025**



Source: NIC 2008

Even in Pakistan, things have begun to change. Most of its clerics now offer family planning information at mosques, and agree that Muslim texts support contraception. (Karim 2005) This has been given the imprimatur of a number of Islamic family planning conferences, including a high-profile 1990 event in Indonesia sponsored by Egypt's al-Azhar University, a leading center of Muslim religious thought. (Karim 2005: 53) Recently, ninety delegates from almost every school of

Islamic thought attended a three-day "International Ulama Conference on Population and Development" held in the Pakistani capital, Islamabad in 2005. The consensus, drawing on the examples of Tunisia, Iran, Indonesia and other low-fertility Muslim countries, was that family planning was in harmony with the tenets of Islam. (RCPRHE 2005)

Among the many Muslim societies that have embraced family planning, none is more striking than Iran. In the 1960s and 70s, the Shah pursued a westernization policy focused on getting women outside the home into education and work, and making contraception widely available. Fertility began to decline. Then came the Iranian Revolution in 1979. Ayatollah Khomeini's revolutionary regime codified Islamic dress into law, re-segregated the sexes and sought to push Iranian women back into the home. Family planning clinics were derided as an imperialist plot against Islam and closed; the age of marriage was lowered to 9, and the role of women as mothers lauded. The Iran-Iraq war in the 1980s added steam to the regime's emphasis on higher fertility. Unsurprisingly, fertility rates returned to traditional high levels of around 6 children per woman. Then the unthinkable began to happen. As the population approached 60 million and the burdens of a young population strained social resources, religion bent to accommodate secular demands. 'Secular' voices came from all directions: up from the street and down from policy makers and intellectuals. These actors lobbied the religious authorities to act. Their efforts were smoothed by the content of Islamic texts, which do not forbid contraception and are unclear on abortion. (Karim in Karim and Jones 2005) A fatwa was obtained from a prominent cleric, and within a very short space of time in the late 1980s, family policy in Iran went full-circle, from pronatalism to planning.

The religious authorities saw as their first and primary task to dispel the myth that the population debate originated in modern Western society. Reviewing debates on the permissibility of fertility control and sponsoring research and republication of medieval Islamic works on population and contraception, they established that concern about population had preoccupied Muslim scholars long before it was discussed in the West. Thus, the authorities were able to celebrate Iran's Islamic heritage, to promote family planning, and to reinforce their independence from the West. (Hoodfar and Assadpour 2000)

Government poured funds into reopening clinics and training an army of local women as family planning advisors and practitioners. Fertility plummeted from 6 to 2 children per woman in under two decades, and Iranian fertility is now below the replacement level. Women continue to marry early, in accordance with Islamic law, but combine this with early and effective use of contraception. (Abassi-Shavazi 2006)

Overall, the story of family planning in Muslim countries is one of qualified success. Yet state policy can change course if determined conservative factions gain power. Religious motivations may also dovetail with nationalist pronatalism. Outside of sub-Saharan Africa, Muslim fertility seems most resistant to decline in conservative Muslim societies like Yemen, Oman, Saudi Arabia and Pakistan. In Pakistan, the strong Deobandi fundamentalist movement has attacked the country's family planning policies as a western import linked to decadence, and an imperialistic attempt to control the Muslim population. They cite Koranic verses extolling the virtue of children and marriage and instructing families not to kill children during times of want. Sometimes fundamentalists dredge up the anticolonial Islamic Puritanism of Maulana Maudoudi, who, in a 1937 tract, savaged birth control as a

western plot against Islam which would introduce western promiscuity and women's liberation into Pakistan. (Karim in Karim and Jones 2005: 50-51)

Elsewhere the threat is deadly serious. In Afghanistan and Pakistan's tribal areas, Taliban insurgents have taken to killing healthcare workers involved in family planning. Threats, kidnappings and assassinations have brought family planning to its knees in disputed areas. After murdering a female healthcare worker in Kandahar, Taliban insurgents wrote to her employer. "We took up arms against the Infidels in order to bring Islamic law to this land," they crowed in a letter bearing the seal of the Taliban military council. "But you people are supporting our enemies, the enemies of Islam and Muslims...Personnel were trained to distribute family planning pills. The aim of this project is to persuade the young girls to commit adultery." (Blackwell 2008) In rural areas of Afghanistan and Pakistan, local religious leaders exercise great influence over people's views on contraception. In Taliban-dominated southern Afghanistan, people tend to accept the prohibitionist views of their conservative imams. (Mehtab Karim, private conversation, Pew Forum, Washington, November 2008)

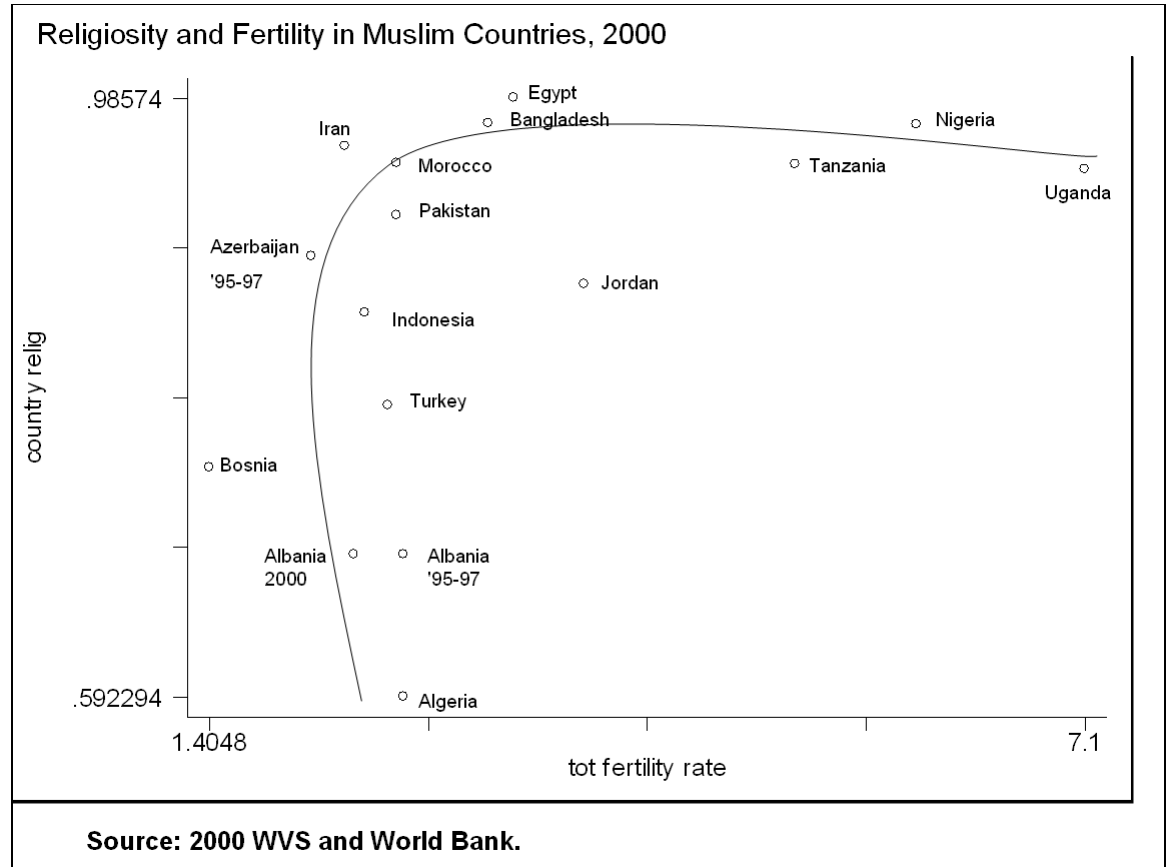
Shades of this posture are likewise evident among radical Islamist factions in mainstream states, where their arguments may dovetail with the secular imperatives of nationalists or politicians who seek an enlarged power base. Palestinian nationalism has long been pronatalist, with its politicians, journalists and poets singing the praises of their 'demographic weapon' against Israel. (King 2002: 386) Though secular and Islamist nationalists both extol the virtues of pronatalism, it is noteworthy that fertility rates are higher in Gaza, a Hamas bastion and stronghold of the Islamist-inspired second intifada, than in the secular, Fatah-controlled West Bank. (Fargues 2000: 469-70) Even in Turkey, where the temperature of conflict is lower, Islamist nationalists

have played the pronatalism card. Prime minister Recep Tayyip Erdogan, leader of the Islamist Justice and Development Party (AKP), cut his teeth by attacking contraception and abortion to woo both nationalist and Islamist audiences. In 2002, two years before he was elected, Erdogan pulled few punches: "To recommend to people not to procreate is straight out treason to the state," Erdogan told a crowd gathered to celebrate the opening of an AKP office in Istanbul. "It's a means of wanting to erase the history and the surface of the land". Having played on nationalist registers, he moved to religion: "Have babies," he told the crowd. "Allah wants it." (Caldwell 2008)

Iranian hardline president Mahmoud Ahmadinejad is no stranger to this issue. He is seeking to change the course of Iranian family policy, advocating renewed population growth. Criticizing Iran's below-replacement fertility rate, he wants Iran's population to grow from its current 70 million to 120 million. Along the way, he favours scaling back women's participation in the labour force to concentrate on reproduction. "I am against saying that two children [per woman] are enough", thundered Ahmadinejad. 'Our country has a lot of capacity. It has the capacity for many children to grow in it. It even has the capacity for 120 million people. Westerners have got problems. Because their population growth is negative, they are worried and fear that if our population increases, we will triumph over them.' Unfortunately for this maverick, Ahmadinejad faces an established opposition, backed by a majority of Iranians and many senior clerics. (Cincotta, forthcoming; Tait 2006) Factionalism within the regime is intense, and popular sentiments play a role in determining which faction gains favour. Iran's quasi-democracy means that Ahmadinejad must be mindful of his popularity, which could stay his pronatalist hand.

Notwithstanding the rearguard action of several Islamist state and non-state factions, the demographic transition appears to be well and truly on its way in the Muslim world. Country religiosity seems to have little bearing on this. In fact, a crosstabulation of religiosity rates<sup>1</sup> and total fertility rates at country level in the Muslim world shows that there is no linear relationship between religiosity and fertility. Iran, Azerbaijan and Indonesia are relatively religious yet have lower-than-average fertility for Muslim countries while Uganda and Tanzania have higher average fertility despite middling religiosity. This finding suggests that Muslim countries which have strong religious norms do not, *ipso facto*, have higher fertility (i.e. Iran, Azerbaijan) while high fertility Muslim countries may not be the most religious (i.e. Uganda, Tanzania). Moreover, multivariate analysis (to be considered later) suggests that when controls are applied, the impact of religiosity in a Muslim country is to *depress* fertility. This is almost certainly a spurious finding linked to the somewhat lower religiosity of fertile African societies compared to Middle Eastern ones and disappears with country controls. In all likelihood, most countries will track the path of Albania (the only country for which we have more than one data point) which became less fertile but remained just as religious in the period 1995-2000. This is no doubt true of the likes of Egypt, Bangladesh and Iran (though we lack historical data), where almost everyone is religious. (See figure 2)

**Figure 2. National Religiosity and Total Fertility Rates in Muslim Countries, WVS 2000 (Muslim respondents only)**



### Micro-Level Muslim Fertility

Most Muslim governments, even those under Islamist sway – are succeeding in their family planning efforts. But there are some cautionary notes. First, Muslims – like many minorities - tend to have higher fertility when they are in the minority. (Goldscheider 1971) In Malaysia, Egypt, Lebanon or Albania, where Muslims are a comfortable majority, their fertility differs little from that of non-Muslim minorities. (Westoff and Frejka 2007) In Europe, India, Thailand, Russia, China and the

Philippines, the Muslim fertility advantage over other groups is greatest. This is particularly true of ethnoreligious conflict zones like Israel-Palestine or India where a significant Muslim fertility advantage persists despite urbanisation and equivalent access to contraception. (Morgan, Stash, Smith and Mason 2002; Moulasha and Rao 1999) Yet fertility rates among most Muslim minorities are also on their way down. This is particularly noticeable among European Muslims, whose fertility is falling toward host country levels. In Austria, the number of children expected to be borne by Muslim women over their lifetime (TFR) declined from 3.09 in 1981 to 2.34 in 2001. (Goujon, Skirbekk et al. 2006: 13) Similar trends have been observed across all of western Europe. In Switzerland, Germany and the Netherlands, Turkish-born women now have an expected fertility rate of less than two children. This reflects the decline in Turkey itself. Pakistani and Somali fertility is highest among European Muslims, followed by North Africans and Turks, but all are falling fast. (Westoff and Frejka 2007)

A central argument here is that fertility differences rooted in economic underdevelopment or unselfconscious, 'traditional' cultural differences (i.e. Protestant v. Catholic, Muslim v. Christian) will fade in the absence of ethnoreligious conflict. Those who merely happen to be Muslim but lack a mobilised commitment to political Islam will experience declining fertility as their economic situation develops and access to family planning improves. On the other hand, differences based on either mobilised Muslim ethnic identity (i.e. Palestinian, Moro) or religious intensity/conservatism (i.e. political Islam) will endure or widen as societies enter the second demographic transition. Religious fertility among Muslims will be driven increasingly by conservative subgroups and individuals rather than states, because

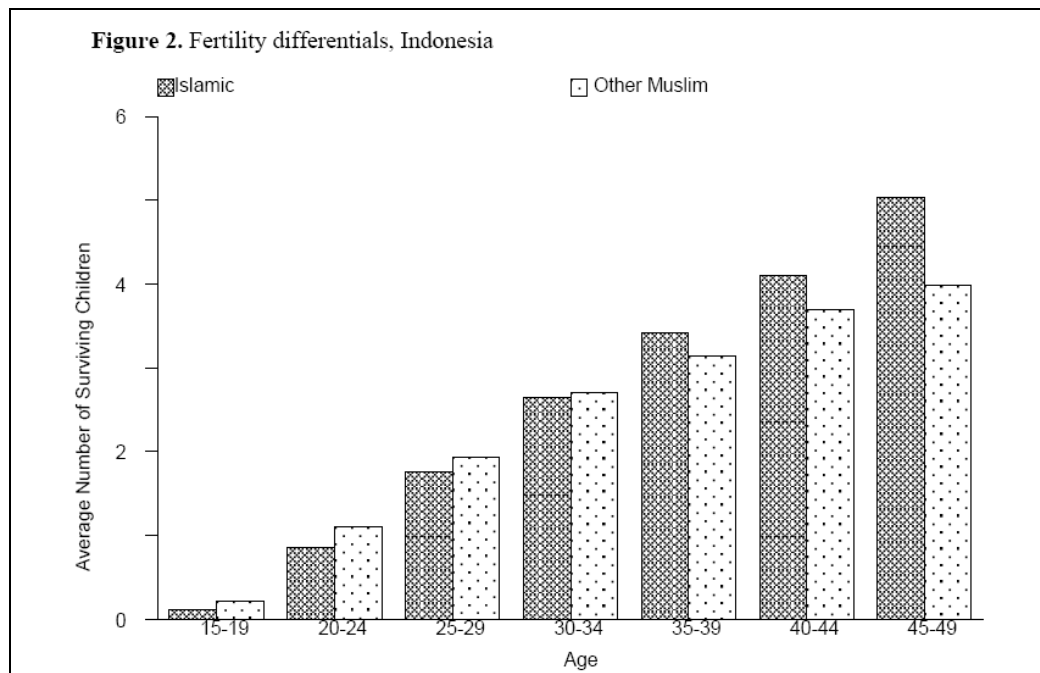
states are mindful of secular considerations which point toward effective family planning.

To investigate, we shall redirect our attention to individual-level data. One of the few attempts to examine the link between Islamist religious beliefs and fertility comes from a study by Eli Berman and Ara Stepanyan in 2003 which 'investigates every data source the authors could find on radical Islamic communities' to examine Islamist fertility. (Berman & Stepanyan 2003: 1) The datasets compiled came from disparate corners of the Muslim world: Indonesia, rural Bangladesh, rural parts of the Indian states of Uttar Pradesh and Bihar, and Cote D'Ivoire in West Africa. The principal indicator of Islamism was whether children were sent to *madrassas*, or Islamic religious schools. Some 13 percent of Indonesians sampled attended *madrassas*, but the proportion attending elsewhere was only about 2 to 3 percent. The authors found that 'fertility is higher and returns to education are generally lower among families that send children to Islamic schools'. (Berman & Stepanyan 2003: 30)

However, the model coefficients for Islamic schooling were much weaker than those for overall education and were strongest in the Indian states of Uttar Pradesh and Bihar. Elsewhere (Indonesia, Bangladesh, Cote D'Ivoire), attendance at *madrassas* proved significant, but only in some models. Figures 3 and 4 show that the Islamist fertility premium varies considerably between different societies but is nowhere greater than about 30 percent. These results confirm that Islamism is a significant determinant of fertility, but not to such an extent as to suggest imminent growth in the Islamist population on the scale of the ultra-Orthodox Jews in Israel who have a 3:1 fertility advantage over non-Orthodox Jews. (i.e. Fargues 2000) Let us also bear in mind the generally small numbers (2-3 percent) of Islamists in these

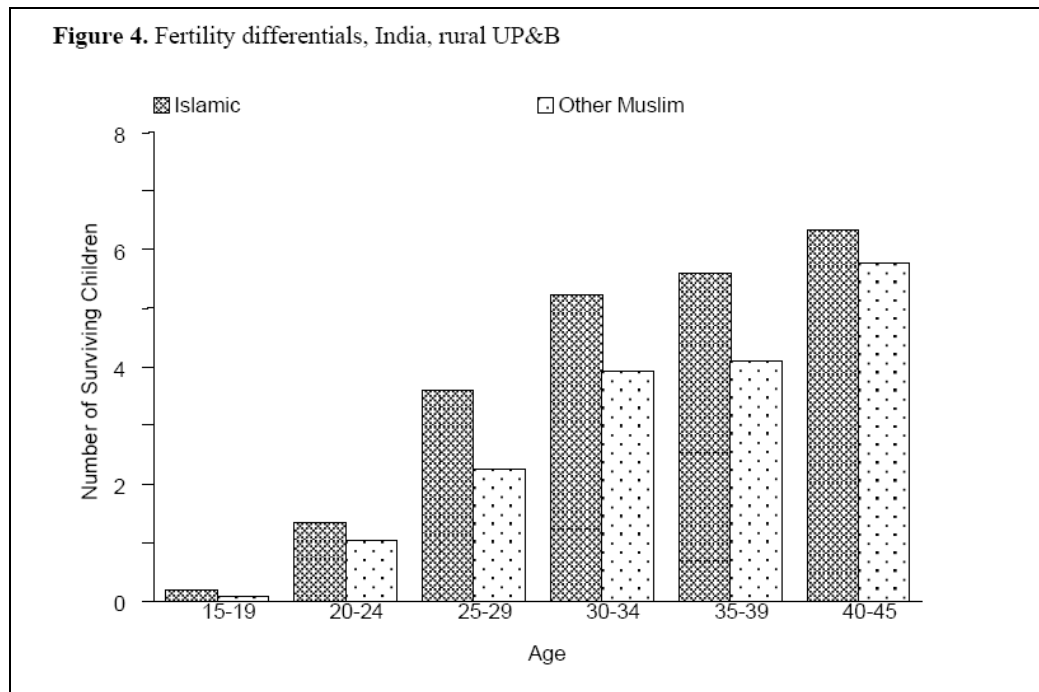
samples, though the proportion of those sympathetic to Islamism may be much wider than the madrassa-attending population. A better point of comparison therefore is the United States, where the fertility premium of conservative over mainline Protestants appears to be very similar to that between Islamist and non-Islamist families. (Roof and McKinney, 1987) The 15-20 percent fertility advantage enjoyed by religious west Europeans over their nonreligious fellow citizens is also of similar magnitude. (Kaufmann 2007) They intimate that demographically-driven radical change may occur in Islamic countries, but over a period of a century or more rather than a generation.

**Figure 3.**



Source: Berman and Stepanyan 2003

**Figure 4.**

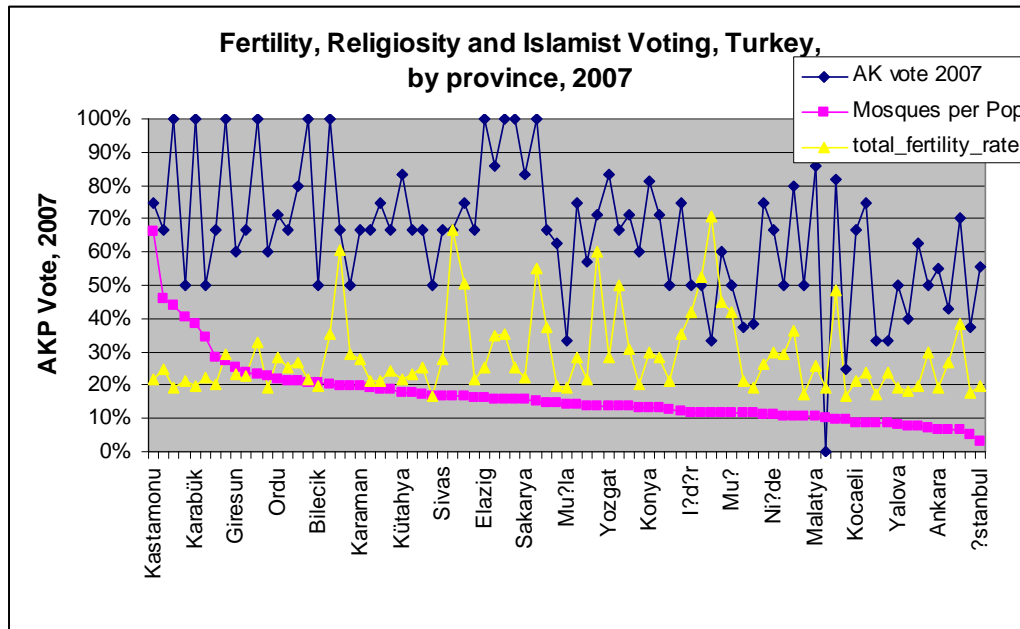


Source: Berman and Stepanyan 2003

What of Islamism? The first thing to bear in mind is Ernest Gellner's classic view that puritanical Islam is an advanced phenomenon that tends to diffuse out from urban centres of learning. It is in many respects a modernizing movement that confronts the more heterodox folk Islam of the countryside. (Gellner 1981) When it acts as a competitor to rural, sufi traditionalism, we would not expect Islamism to cause higher fertility than average. This appears to be the case in Iran, where traditionalist (but less Islamist) ethnic peripheries of Kurds and Baluchis have the highest fertility while more Islamist Persian districts are no more fertile than average. (Abbasi-Shavazi et al. 2006) In Turkey, at province level, Islamic religiosity seems unrelated to fertility. Instead, higher fertility seems to be related to illiteracy rates and, to a lesser extent, higher unemployment rates. Table 1 and figure 5, for example, show that provinces which support the ruling Islamist AKP are more religious (in terms of religious

students and mosques per capita) and have more married people and fewer divorcees, but are no more fertile than provinces like Istanbul which are less keen on the AKP.<sup>2</sup>

Figure 5.



Source: Author's calculations; Turkish national statistics.

Table 1. Predictors of Voting for AK (Islamist) Party, Turkey, 2007

	Coefficient (B)	S.E.	t-statistic
<b>Divorce Rate</b>	-19.68***	4.39	-4.48
<b>Elderly Dependency Ratio</b>	-0.02**	0.01	-3.47
<b>Mosques per Capita</b>	67.59**	23.89	2.83
<b>Sex Ratio</b>	-0.01*	0.00	-2.18
<b>Votes for Minor Parties</b>	-0.65***	0.09	-7.3
<b>Infant Mortality Rate</b>	0.00*	0.00	-2.1
<b>constant</b>	1.76***	0.27	6.5
<b>R<sup>2</sup></b>	<b>.658</b>		
<b>N</b>	<b>81</b>		

\*p<.05; \*\*p<.01; \*\*\*p<.001

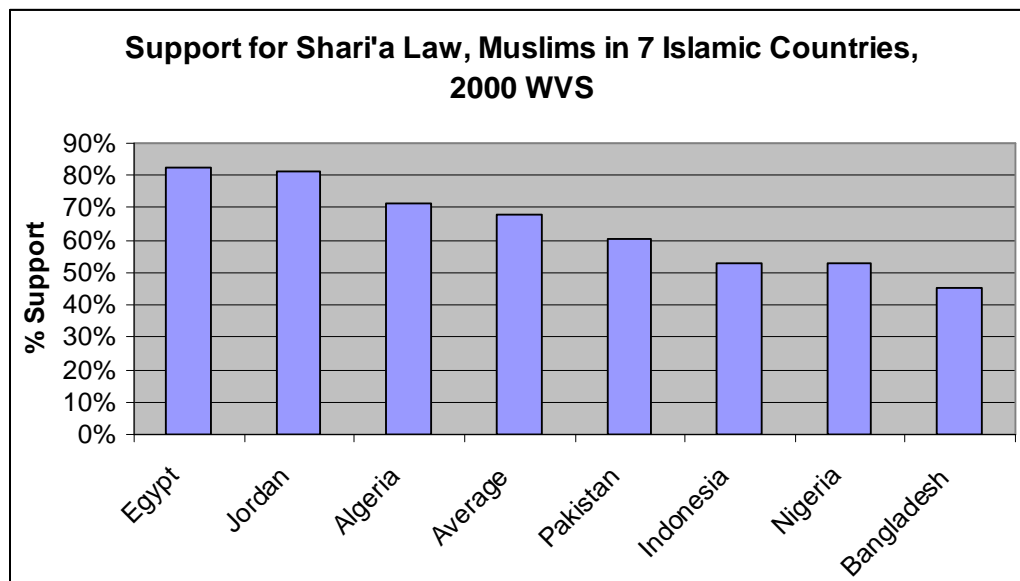
However, as with the national-level of geography, things change when we focus on individuals. True, bivariate analyses of demographic and health surveys find that traditionalism, as measured by arranged marriage, payment of a dowry, membership in a patrilocal family, rural residence and illiteracy is the most important determinant of birth rates. Kurdish ethnicity is also associated with higher birth rates.<sup>3</sup> (Yavuz 2006) A recent study of contraceptive use in Iran, based on a 2002 Iranian fertility survey, likewise finds that attitudinal variables are much weaker predictors of the odds of using contraception than education levels. Further tests using a battery of seven attitudinal items related to women's employment find little or no significant relationships between gender role traditionalism and contraceptive use. The authors therefore suggest that secularisation and 'modern' attitudes are not a factor in Iranian contraceptive behaviour. (Abbasi-Shavazi et al. 2006)

Nevertheless, censuses and fertility surveys, which are widely available for most Muslim countries, are notoriously poor at detecting the influence of religion because they neglect measures of religious intensity (i.e. belief, attendance) data. The World Values Survey (WVS) provides an exception in that its recent 1999-2000 wave surveyed a number of largely Muslim countries for the first time. This allows us to correlate fertility with specific indices of religious intensity. This is clear in the WVS' 1999-2000 wave, the only individual-level survey that permits us to focus on how religiosity and Islamist attitudes are linked to higher fertility. Multivariate manipulation of this survey shows that religious Turks are significantly – if modestly – more fertile than nonreligious Turks.<sup>4</sup> We shall see that this finding is especially true of urban areas. As second demographic transition theory suggests, it is only when traditionalism fades, material constraints diminish and people's ideology and fertility

are no longer inherited that we would expect the religiosity-fertility nexus to strengthen.

Let us consider the WVS findings in greater detail. The WVS asked 8500 respondents in seven Islamic countries a number of religiosity questions (participation, attendance, belief) as well as whether they agreed that the state 'should implement Shari'a only' as the law of the land. The proportion of Muslims favouring Shari'a as the exclusive law of the land was roughly two-thirds, ranging from over 80 percent in Egypt and Jordan to around half in Indonesia, Nigeria and Bangladesh. Responses, restricted to Muslims only, were highest in the Middle East and North Africa, and lower in Asia and sub-Saharan Africa. (See figure 6)

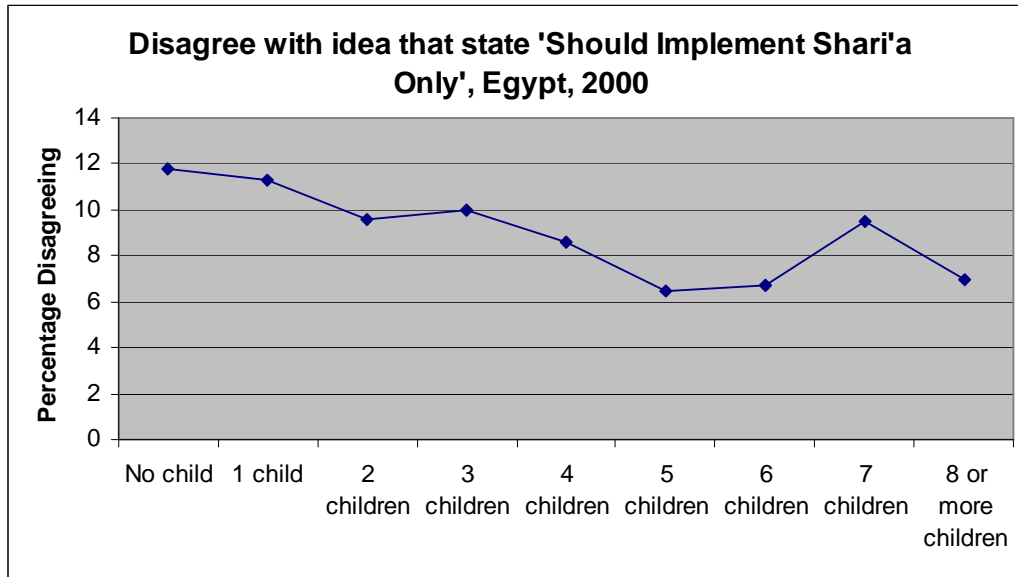
**Figure 6**



Source: WVS. N=8544 cases.

A glance at the Shari'a question crosstabulated with fertility shows some interesting patterns. In Egypt, for example, we find that those with lower fertility are more likely to disagree with the idea that Shari'a should be implemented as the law. (See figure 7)

**Figure 7**



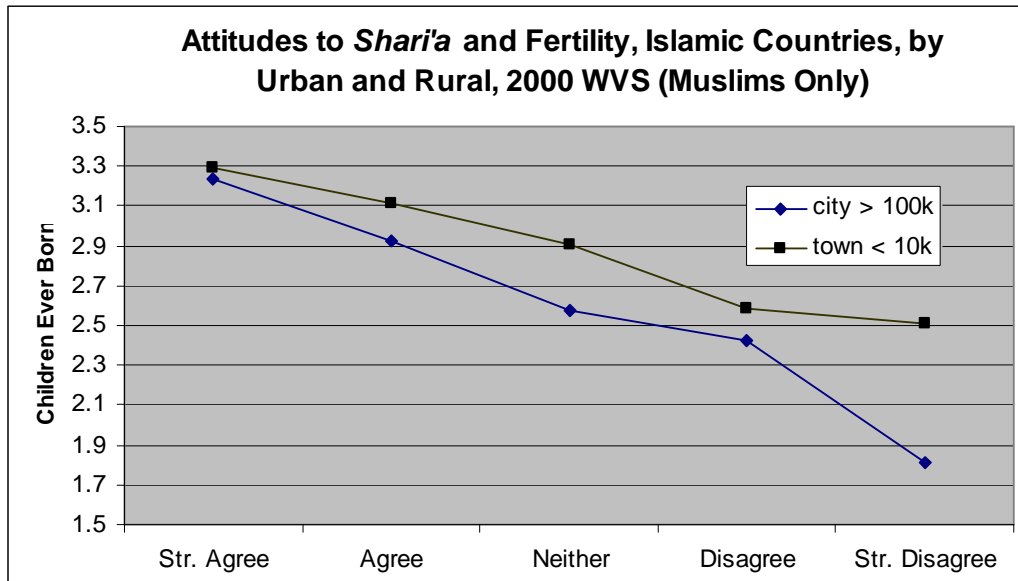
Source: WVS 1999-2000. N = 2113 respondents.

In the wider universe of majority-Muslim countries where this question was asked (Bangladesh, Indonesia, Jordan, Pakistan, Nigeria, Egypt, Algeria), a similar pattern could be discerned. Yet we know that fertility rates are falling in many of these countries due to urbanisation and education. It could be the case that education and a shift of population to the cities simultaneously lowers fertility and the belief in the appropriateness of Shari'a law. Or perhaps older people, who are more likely to have completed their fertility and/or had more children, are more supportive of Shari'a law. On its own, therefore, our finding that supporters of Shari'a law have higher fertility could be an artefact of unspecified factors like age, education and urbanisation.

Urban, educated or younger individuals in Muslim societies might be less supportive of Shari'a and also prefer smaller families.

Let us consider each of these counter-explanations, beginning with rural-urban geography. When we break up the sample into rural and urban residents, we find that the pattern of Islamist fertility holds. Moreover, as figure 8 shows, the *effect seems more marked among urban populations*. Among city dwellers, fertility is almost twice as high (3.2 v. 1.8) amongst the most pro-Shari'a sector of opinion than amongst those least in favour, whereas in rural areas, the ratio is less than 3:2. We might hypothesize that in rural, underdeveloped areas, religious beliefs take a back seat to material realities, such as access to family planning or the economic benefits of larger families, in discriminating between the more and less fertile. In urban areas, where economic incentives for children are lower and costs higher while birth control technology is more widely available, it may be the case that values are a better discriminant of reproductive behaviour. Urban areas also tend to be seats of puritanical Islamic learning as against the more sufi, folk-based religion of the countryside. (Gellner 1981) Since the countryside is a repository of traditional (i.e. natalist) attitudes to fertility, but is weak in its Islamism, the only way we might spot an emerging relationship between Islamism and fertility is by restricting our gaze to urban areas. Such behaviour could encompass a range of issues, including the nature of appropriate gender roles, the decision to use contraception or other forms of family planning, and whether to have children for pronatalist religious reasons. Indeed, it is well-known that political Islam has drawn strength in urban areas like the Nile Delta in Egypt, and is associated with migration to the cities. (Munson 2001; Kepel 2002; Halliday 2000)

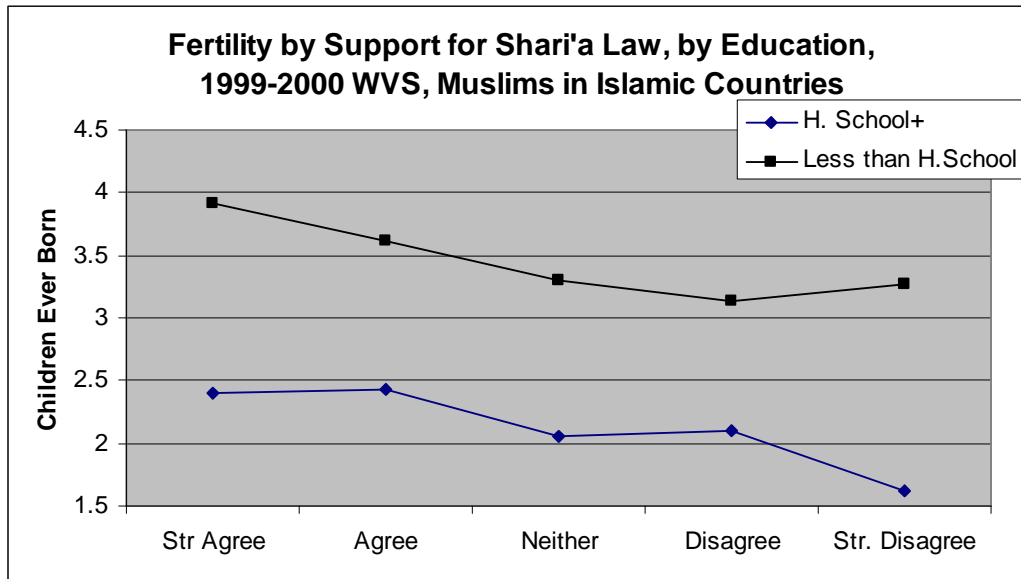
Figure 8



Source: WVS 1999-2000. N = 2796 respondents in towns under 10,000 and 1561 respondents in cities over 100,000. Asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria and Egypt.

WVS evidence for the seven countries where the question on Shari'a law was asked seems to support some findings of demographic and health surveys, but not others. For instance, while there seems to be a large fertility gap of some 1.5 children between those with less than secondary and those with greater than secondary education (supporting findings from health surveys), there remains a distinct relationship between support for Shari'a and higher fertility. This seems to hold for both the well-educated and poorly-educated strata of the population, as shown in figure 9.

**Figure 9.**



Source: WVS 1999-2000. N = 1649 respondents with High School or More, 3318 respondents with Less than High School. Asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria and Egypt.

In order to test these relationships more robustly, we employ a multilevel model of fertility based on the WVS.

### **Data and Methods**

Data are drawn from the 1999-2000 waves of the World Values Survey (WVS). Aggregate data comes from World Bank Development Indicators for the relevant year, except for country religiosity which has been computed by taking the arithmetic mean of the individual responses to the WVS question 'are you a religious person' and apportioning 'not religious' and 'atheist' responses into a nonreligious total. The WVS also asks a question on support for Shari'a law in a more restricted range of

countries. The multi-level logistic regressions use national-level data as level 2 regressors and WVS data as level 1 estimators. All analysis uses Stata 7.0. The regression sample only consists of women as is standard practice in demography. For previous tables, however, we have included males since male fertility is also of interest to us.

### **Individual Variables, from the WVS:**

*Dependent:* Children: number of children ever born (resident or otherwise);

*Independents:*

Marital Status: married (1), living together as married (2), divorced (3), separated (4), widowed (5), single/never married (6), divorced, separated or widow (7)

Age: years;

Income: constant Year 2000 US\$;

Education: highest level of education completed (8 levels arrayed ordinally);

Shari'a: 'Now, what's your opinion about a good government? Which of the following characteristics a good government should have?' A: 'It should only implement Shari'a's laws.' Strongly Agree (1), Agree (2), Neither (3), Disagree (4), Strongly disagree (5). Question asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria and Egypt.

Religious Belief: Factor produced from five questions related to religious belief. See appendix 1 for details. Question asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria, Egypt, Azerbaijan, Bosnia, Iran, Morocco, Turkey, Uganda and Tanzania.

Religiosity: Are you a religious person? Yes (1), No (2), Committed Atheist (3).

Question asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria, Egypt, Azerbaijan, Bosnia, Iran, Morocco, Turkey, Uganda and Tanzania.

Religiosity (Binary): Are you a religious person? Yes (1), No (0). No is a recoding of 'No' and 'Atheist'.

Income category: lowest to highest

National Pride: How Proud are you of your nation? Very Proud (1), Quite (2), Not Very(3), Not at all(4)

We begin our modelling by regressing individual female fertility on measures of religiosity, Shari'a support and the standard control variables listed above. Model 1 includes the Shari'a question (limited to six countries), and Model 2 only includes the religious traditionalism question (asked in thirteen countries) and so generates a sample almost twice as large. Yet the coefficients and their significance do not show major differences between the two models. The results, shown in table 2 show some expected findings, and some less expected.

**Table 2. Regression Coefficients on Individual Fertility, Muslim Women in Islamic Countries, 1999-2000 WVS**

	<b>Model 1</b>		<b>Model 2</b>	
<b>Marital status</b>	-.280***	.022	-.265***	.014
<b>Age</b>	.080***	.003	.079***	.002
<b>Traditional Religious Beliefs</b>	.415***	.108	.303***	.054
<b>Shari'a Only</b>	.086**	.028		
<b>Individual Education</b>	-.183***	.016	-.190***	.011
<b>Personal Income</b>	-.030	.016	-.014	.012
<b>Country Religiosity</b>	-2.017***	.238	-.871***	.131
<b>Country Secondary School Enrollment %</b>	.019***	.002	.017***	.001
<b>Country GDP per capita</b>	-2.222***	.494	-1.524***	.270

<b>Country Population 65+</b>	-.464***	.060	-.596***	.047
<b>constant</b>	1.910**	.594	1.861***	.389
<b>R<sup>2</sup></b>	.403		.432	
<b>N</b>	2682		4828	

\*p<.05; \*\*p <.01; \*\*\*p < .001

NB: Country Total Fertility Rate was dropped from the analysis due to problems with multicollinearity. Note that the question on Shari'a was only asked in six countries while that on religious belief was asked in thirteen countries. Its coefficient sign has been reversed here for easier interpretation. See methodology section for the list of countries.

Marital status and age are standard controls which show similar strong relationships to individual female fertility in all countries. Otherwise, education, at both the individual and country levels, has the strongest effect, along with the proportion of elderly people in a society (an indirect measure of a country's fertility and age structure).<sup>5</sup> Higher GDP per capita is related to lower individual fertility. However, the story is not purely structural. We see, for example, that religious traditionalism (with respect to hell, heaven, sin, afterlife) and approval of Shari'a law are significant predictors of fertility.

Traditional religious belief shows a robust effect in these models, and support for Shari'a law - a measure of political Islamist attitudes - is also a significant predictor of fertility at the p<.01 level. Tests with religious attendance show no significant effects when a control for religious traditionalism remains, but attendance emerges as significant when belief is removed from the model. Questions which measure female respondents' view of whether nonreligious people are fit for public office or whether it is better for political leaders to be 'strongly religious' are also significantly correlated with fertility (though slightly more weakly than is true for the Shari'a question).

This brings us to the conundrum that higher country religiosity is strongly and

significantly correlated with lower fertility. This is particularly surprising in view of the fact that the relationship is precisely the opposite across the full WVS dataset. Upon closer examination, we find that the difference is particularly pronounced in developing countries. As table 3 shows, a more religious country is associated with lower individual fertility in developing Muslim countries, but with higher individual fertility in non-Muslim developing countries. Note here that the religiosity of a country is compiled as an aggregate of individual responses to the question, 'Are you a religious person?' with the answers being 'yes', 'no', or 'committed atheist'. This could therefore be interpreted as a measure of the strength of religion as a social norm rather than of religious traditionalism or Islamism.

**Table 3. Regression Coefficients on Individual Fertility, Women, 1999-2000 WVS, Countries with GDP per Capita < \$5,000**

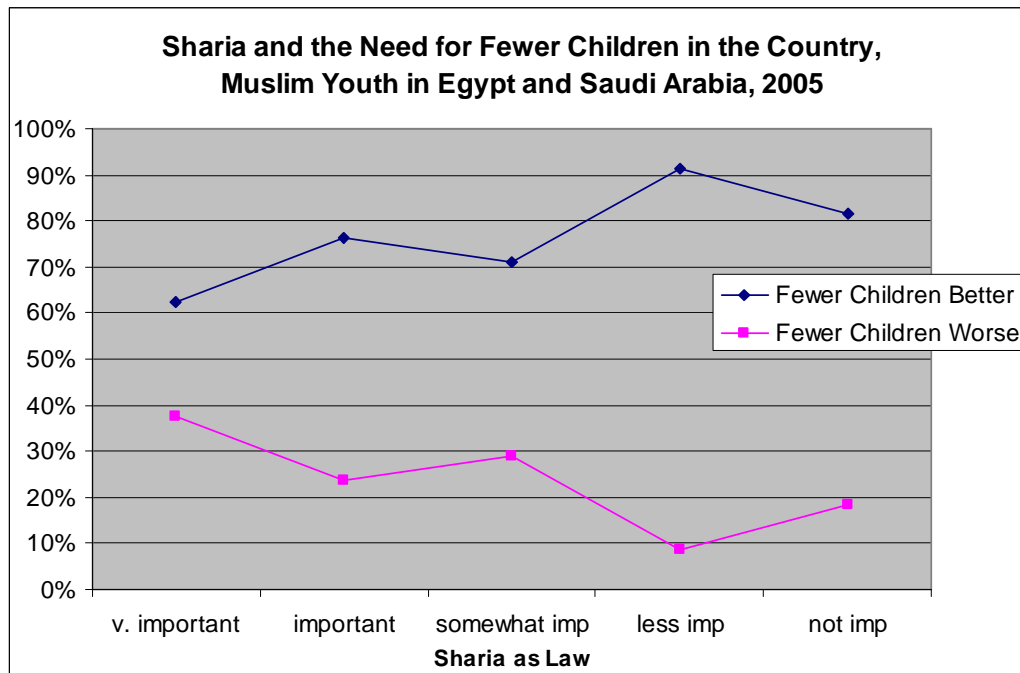
	Muslim		Non-Muslim	
<b>Marital status</b>	-.272***	.015	-.274*	.012
<b>Age</b>	.088***	.002	.054***	.002
<b>Individual Religiosity</b>	-.178	.095	-.093	.054
<b>Individual Education</b>	-.050***	.006	-.045***	.005
<b>Personal Income</b>	-.032*	.013	-.006	.011
<b>Country Religiosity</b>	-1.577***	.181	.109***	.021
<b>Country Secondary School Enrolment %</b>	.012**	.004	.012***	.002
<b>Country GDP per capita</b>	-.139	.578	-1.297***	.202
<b>Country Population 65+</b>	-.753***	.070	-.181***	.010
<b>Country Female %</b>	.165	.097	-.118***	.029
<b>constant</b>	-3.287	4.981	6.637***	1.369
<b>R<sup>2</sup></b>	.438		.533	
<b>N</b>	2817		3585	

\*p<.05; \*\*p <.01; \*\*\*p < .001

NB: Country Total Fertility Rate was dropped from the analysis due to problems with multicollinearity.

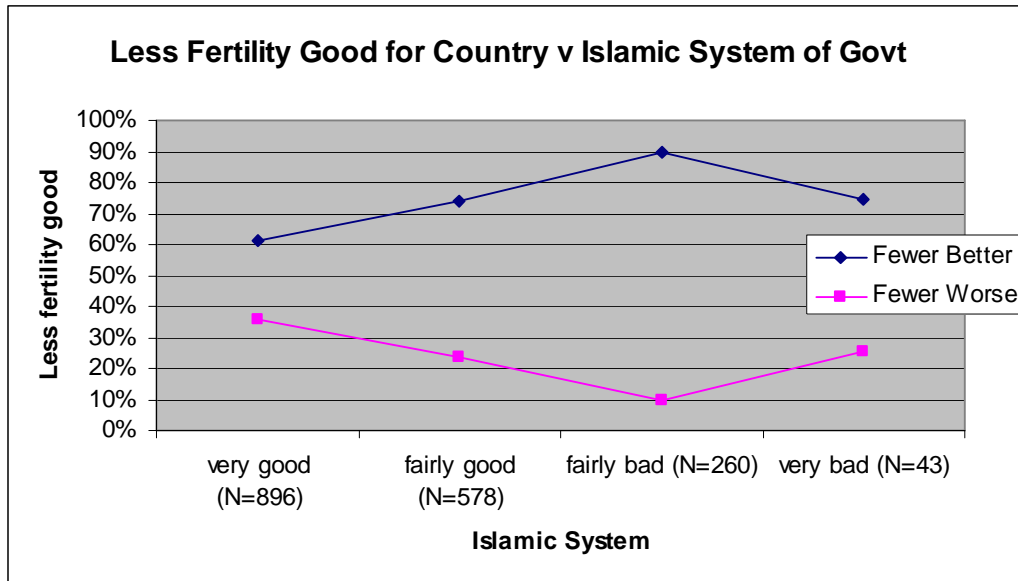
Few surveys which ask detailed questions on Muslim political attitudes include items on fertility. However, a recent survey of 18-25 year-olds in Egypt and Saudi Arabia asked respondents to specify whether they believe their countries would benefit from lower fertility.<sup>6</sup> The survey also asked about political Islamist attitudes. Figures 10 and 11 below show that in the case of both support for Shari'a law<sup>7</sup> and an Islamic government<sup>8</sup>, Islamists are more likely to favour pronatalist policies than non-Islamist Muslims. For instance, those who feel that the government should implement Shari'a or that an Islamic government where the religious authorities have 'absolute power' is 'very good' only favour lower fertility by a 60:40 ratio, compared to 90:10 among those who view Shari'a as 'less important' or an Islamic government as 'fairly bad'.<sup>9</sup> These data do not directly tap fertility behaviour, but are revealing in that 18-25 year-olds are likely to be at the beginning of their fertility odysseys and thus offer a potential glimpse of what the future may hold.

**Figure 10.**



Source: Calculated from Moaddel et al. 2005.

**Figure 11.**



Source: Calculated from Moaddel et al. 2005

### Religiosity in the Muslim World

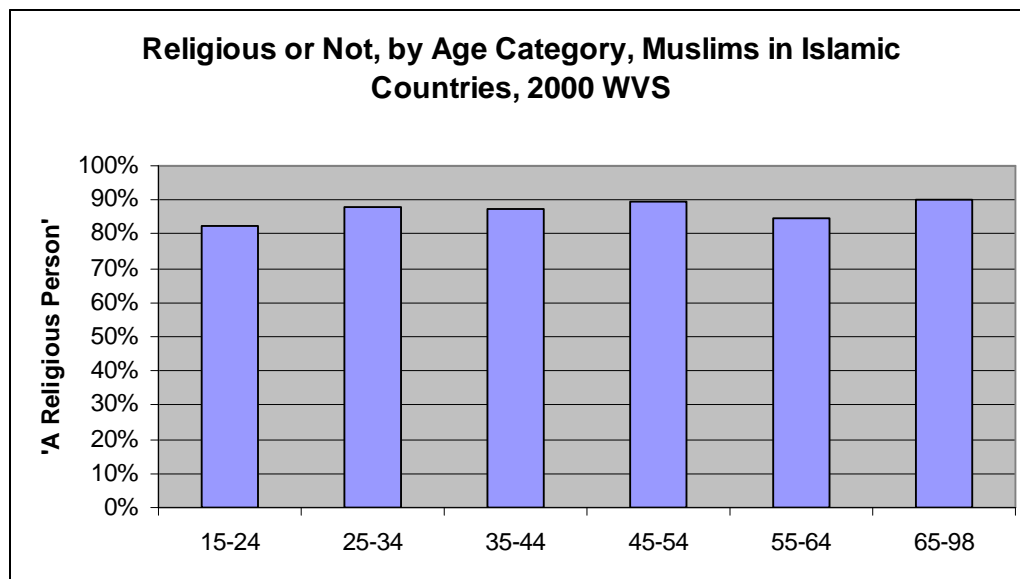
Clearly religious fertility is only one part of the equation when it comes to religious change. Muslims who are religious, and those who hold Islamist beliefs, are more fertile than nonreligious Muslims, though the differential is not as striking as in the Mormon or Israeli-Jewish cases. (Hout, Greeley and Wilde 2001; Fargues 2000)

Muslim secularisation - both in terms of a decline in religious belief or a decline in support for Islamist political values like Shari'a law - could offset the fertility advantage of religious and/or Islamist Muslims in Islamic societies. Evidence for this could come in the form of lower religiosity among emerging, modernising segments of the population, i.e. younger, urban or educated Muslims. Older, rural and less educated populations would be expected to decline as the region develops, ushering in

more secular attitudes. These could counteract or efface the effect of religious fertility.

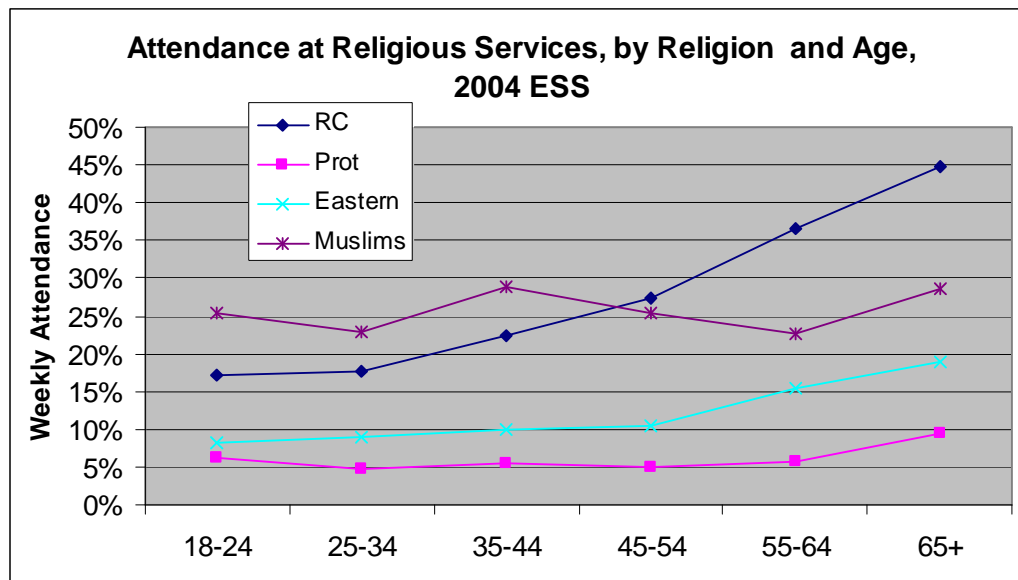
To investigate Muslim religious dynamics, we turn our attention to patterns of Muslim religiosity in the WVS. The WVS data on Muslim countries are limited to the 1999-2000 survey wave, so we cannot parse out life-cycle from cohort effects. That said, multivariate models of whether an individual is religious (1) or not (0) show that age does not correlate well with religiosity. Unlike most western societies, younger Muslims in Islamic countries (apart from those under age 24) are no more likely to be nonreligious than their parents. (See figure 12) Curiously, this reinforces intra-European survey data from the 2004 wave of the ESS, which finds that there is no pattern of decline in religious attendance across European Muslim age categories, in contrast to the pattern for other (Christian) religious affiliations. (See figure 13)

**Figure 12**



Source WVS 1999-2000. N=15197 cases. Question asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria, Egypt, Azerbaijan, Bosnia, Iran, Morocco, Turkey, Uganda and Tanzania.

Figure 13



Source: European Social Survey (pooled sample), 2004

These findings are confirmed in logistic regressions of a religious dummy variable (1=yes, 0=no) on a series of estimators. Table 4 shows the results of this analysis across between nine and thirteen Muslim countries, depending on the model. Model 1 provides estimates for a fixed-effects model with a control for town size. Model 2 estimates a model which controls for town size but uses World Bank country indicators as level 2 controls. Finally, model 3 drops town size (not asked in four countries) and thereby expands the dataset but reduces model specificity.

**Table 4. Logistic Regression Coefficients on Religiosity, Muslims in Islamic Countries, 1999-2000 WVS**

	Model 1	S.E.	Model 2	S.E.	Model 3	S.E.
<b>Marital Status</b>	-.947**	.017	-.946**	.017	-.955**	.013
<b>Age:25-34</b>	1.403***	.130	1.422***	.133	1.316***	.099
<b>Age:35-44</b>	1.452**	.162	1.387**	.157	1.198*	.106
<b>Age:45-54</b>	2.072***	.284	1.858***	.258	1.469***	.154
<b>Age:55-64</b>	1.547**	.217	1.308	.183	1.165	.130
<b>Age:65-98</b>	2.588***	.579	2.117**	.483	1.424*	.214
<b>Income Category</b>					-.947***	.014

<b>(Not) Proud of Nation</b>	-.641***	.034	-.581***	.032	-.674***	.024
<b>Sex</b>	1.464***	.095	1.371***	.091	1.281***	.065
<b>E: Primary</b>	-.795	.099	-.547***	.067	-.783*	.074
<b>E:&gt;Secondary</b>	-.908	.136	-.717*	.107	-.839	.106
<b>E:Secondary Tech.</b>	-.680**	.085	-.589***	.072	-.586***	.061
<b>E:&gt;Secondary (Univprep)</b>	-.665**	.092	-.461***	.063	-.583***	.067
<b>E:Secondary (Univprep)</b>	1.032	.131	-.655***	.079	-.672***	.066
<b>E:Some University</b>	1.026	.148	-.688**	.097	-.813	.101
<b>E:University</b>	1.108	.149	-.749*	.097	-.681***	.073
<b>T:2,000-5,000</b>	1.313	.195	1.697**	.258		
<b>T:5,000-10,000</b>	1.354*	.207	2.295***	.357		
<b>T:10,000-20,000</b>	1.338	.228	2.863***	.500		
<b>T:20,000-50,000</b>	-.781	.121	1.859***	.305		
<b>T:50,000-100,000</b>	-.721*	.116	1.596**	.269		
<b>T:100,000-500,000</b>	1.133	.181	2.730***	.481		
<b>T: over 500,000</b>	-.674**	.095	1.230	.175		
<b>Algeria</b>	-.028***	.008			-.046***	.028
<b>Bangladesh</b>	-.147***	.044			-.317	.190
<b>Bosnia &amp; Herzegovina</b>	-.162***	.051			-.284*	.173
<b>Indonesia</b>	-.042***	.012			-.112***	.067
<b>Iran</b>					-.187**	.112
<b>Jordan</b>	-.131***	.038			-.213*	.128
<b>Morocco</b>					-.466	.288
<b>Nigeria</b>	-.406**	.128			1.622	1.057
<b>Pakistan</b>	.128***	.038			-.195**	.117
<b>Turkey</b>					-.142**	.084
<b>Egypt</b>	1.266	.401			2.267	1.394
<b>Tanzania</b>					-.428	.266
<b>Country Religiosity</b>			5.946***	.500		
<b>Country (log) GDP per capita</b>			2.141***	.289		
<b>Country Secondary Enrolment %</b>			-.998	.002		
<b>Country Population 65+</b>			2.146***	.201		
<b>N</b>	10347		9893		14301	
<b>Pseudo R<sup>2</sup></b>	.219		.202		.135	

Notes: E=education, T=town size. Reference categories: Age: 18-24; Education: less than Primary; Townsize: less than 2000 residents; Country: Uganda. NB: Town size variable reduces number of countries from 13 to 9 countries.

Model 1 shows that all age categories are more religious than the youngest, 18-24 category, and the over-65 group is most religious. However, there is fluctuation in religiosity across age groups rather than a linear trend, suggesting an absence of clear evidence for secularisation as in the case of Catholic Europe, for example. Education also seems to reduce religiosity (as compared to those with less than primary), an

effect which is clearest with regard to secondary schooling but encompasses both primary and university education. On the other hand, aggregate secondary education levels within a country had no significance for religiosity.

Income was not significant in the first two models and led to over a thousand deleted cases. Moreover, controlling for it did not affect other estimates (including education) enough to warrant its inclusion. In model 3, however, income does emerge as highly significant, though not enough to affect the importance of the education coefficients. Wealthier individuals may be less religious than poorer people, but at country level, the wealthier Muslim countries tend to be more religious. This may be attributable to the fact that many wealthier countries are in the Middle East (oil producing or otherwise). Marital status had a significant impact in the expected direction, with increasingly less conventional non-married categories less religious than married.

Town size likewise had a significant effect in most models. The effect of larger town size (above the reference category of rural dwellers) is generally to increase rather than lower religiosity levels, contrary to popular perception. This seems to fly in the face of secularisation arguments which would place weight on urbanisation as a force for secularisation. Having said this, the fixed-effects model shows somewhat weaker results for both town size and education, both of which lose much of their significance when country intercepts are applied.

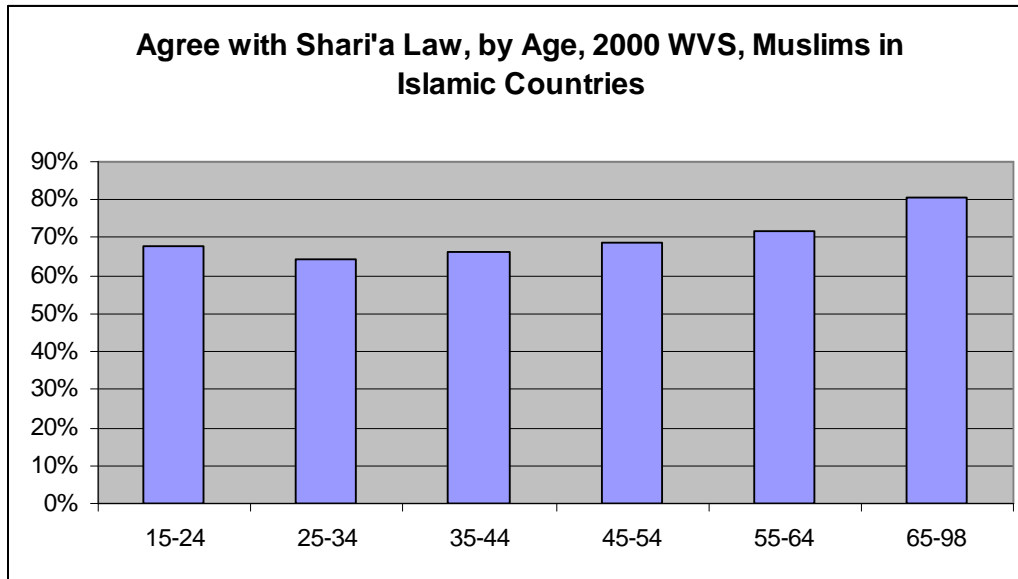
The salutary impact of national pride on individual religiosity was also a robust finding, casting some doubt on theories which juxtapose Islamism and nationalism. Nations may be western colonial inventions that divided the mythical Umma, and nationalist parties often oppose Islamists, but Zubaida seems correct to connect Islamism and nationalism to similar sentiments. (Zubaida 2004) In terms of particular

nations, many countries showed significant negative coefficients when compared to Uganda (whose Muslims are 94% religious), notably Algeria and Indonesia, but also Pakistan, Turkey and Iran. Note that these results must be interpreted relative to the high degree of religiosity prevailing in the Muslim world. Even so, given the strongly religious character of Iran (95% religious) and Pakistan (91% religious), among others, it may be premature to read too much into the country parameters apart from Algeria and Indonesia where nonreligiosity is at a higher level.

### Support for Shari'a Law

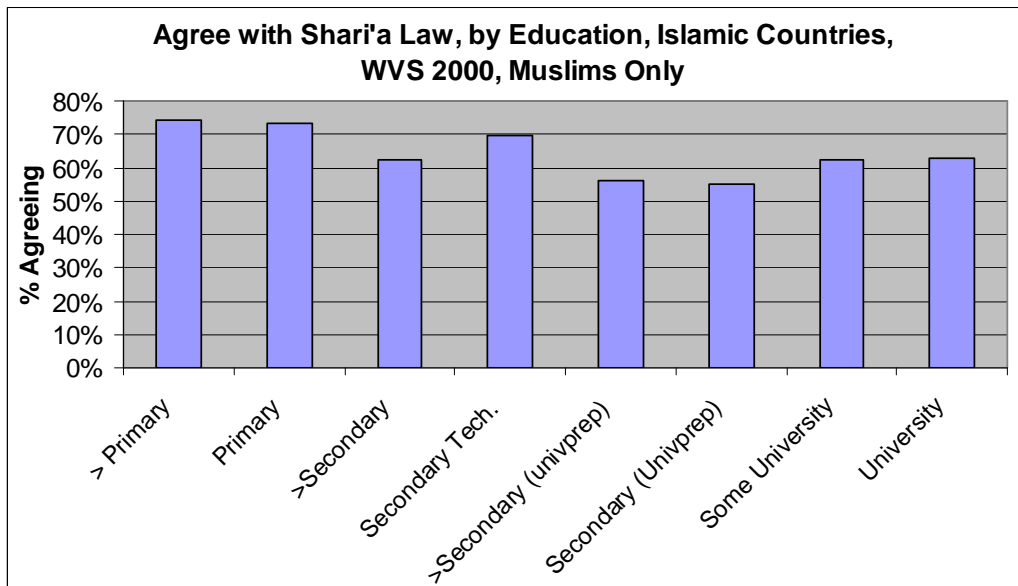
Moving from mere religiosity to Shari'a support, the WVS' most important measure of Islamism, we find that age tends to predict a modestly stronger pro-Shari'a orientation. Those 65 and older are especially supportive of Shari'a. (See figure 14) Higher education, as with youth, tends to moderately depress support for Shari'a law, with the important caveat that this only seems to be true of secondary education rather than university - which appears to be associated with *more* pro-Shari'a attitudes (see figure 15). This could be related to the more politicised context of universities, hence an identity with Islamism in the context of international or domestic politics may be more likely. In support of this view, Zubaida remarks that Shari'a's appeal is more a function of its political symbolism of defiant identity than its ethical attractiveness. (Zubaida 2003) This finding is especially interesting given the observation that jihadis from Islamic countries tend to have a more educated, often university-trained, profile than the general populace in those countries. (Pape 2005)

**Figure 14**



Source: WVS 1999-2000. N = 7436 respondents. Asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria and Egypt.

**Figure 15.**



Source: WVS 1999-2000. N = 7412 respondents. Asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria and Egypt.

Multivariate models which specify support for Shari'a Law as the dependent variable help us make sense of these patterns. Table 5 shows models which differ only in their inclusion or exclusion of a variable for fertility (as this is a very significant variable but was often unanswered, and thus causes 25 percent of cases to be dropped).

**Table 5. Regression Coefficients on Disagreement with Shari'a law, Muslims in Islamic Countries, 1999-2000 WVS**

	<b>Model 1</b>	<b>S.E.</b>	<b>Model 2</b>	<b>S.E.</b>
<b>Children</b>			-.027**	.008
<b>Marital Status</b>	-.005	.007	-.022*	.010
<b>Age:25-34</b>	.060	.038	.170**	.053
<b>Age:35-44</b>	.070	.043	.191**	.057
<b>Age:45-54</b>	.089	.050	.229**	.064
<b>Age:55-64</b>	-.047	.055	.123	.070
<b>Age:65-98</b>	-.022	.069	.151	.083
sex	.063*	.025	.037	.029
<b>E: Primary</b>	.074	.041	.063	.044
<b>E:&gt;Secondary</b>	.199***	.055	.210**	.062
<b>E:Secondary Tech.</b>	.232***	.041	.233***	.047
<b>E:&gt;Secondary (Univprep)</b>	.375***	.058	.284***	.072
<b>E:Secondary (Univprep)</b>	.387***	.046	.424***	.055
<b>E:Some University</b>	.345***	.051	.347***	.062
<b>E:University</b>	.293***	.046	.272***	.054
<b>T:2,000-5,000</b>	-.075	.059	-.066	.066
<b>T:5,000-10,000</b>	-.155**	.058	-.178**	.066
<b>T:10,000-20,000</b>	-.191**	.064	-.289***	.074
<b>T:20,000-50,000</b>	-.172**	.061	-.258***	.071
<b>T:50,000-100,000</b>	-.213**	.069	-.207*	.083
<b>T:100,000-500,000</b>	-.312***	.069	-.341***	.080
<b>T: over 500,000</b>	-.035	.058	-.106	.067
<b>(Not) Proud of Nation</b>	.104***	.023	.133***	.027
<b>Country Religiosity</b>	-.264***	.035	-.295***	.045
<b>Country (log) GDP per capita</b>	-.997***	.059	-1.021***	.069
<b>Country Tertiary Education</b>	.007**	.002	.010***	.003

<b>Country Total Fertility Rate</b>	-.452***	.038	-.449***	.043
<b>_cons</b>	11.328***	.581	11.523***	.676
<b>N</b>	8548		6536	
<b>R<sup>2</sup></b>	.123		.139	

Notes: E=education, T=town size. Reference categories: Age: 18-24; Education: less than Primary; Townsize: less than 2000 residents; NB: Children variable reduces the number of cases by about 25 percent. Shari'a Question asked in Algeria, Bangladesh, Indonesia, Jordan, Pakistan, Nigeria and Egypt.

Before attending to the small differences between the models, let us examine where they agree. First of all, the patterns here largely reflect those found in the religiosity models in table 4. Country religiosity is associated with more pro-Shari'a sentiment, just as it is associated with greater individual religiosity. Higher GDP per capita is also associated with greater support for Shari'a law, as with religiosity. National pride bears a similar relationship to religion: disproportionately predicting support for Shari'a Law and vice-versa. In addition, married respondents are more pro-Shari'a, as are those with children. Higher fertility rates in a country predict a more pro-Shari'a orientation. We found similar results in our religiosity models.

With respect to education, schooling at primary or above leads to a growing disagreement with Shari'a Law. In addition to individual education, country-wide tertiary education levels significantly reduce pro-Shari'a sentiment (secondary levels were nearly as significant, in the same direction). The town size coefficients also look much the same in this model as in the religiosity ones. Namely, that town size behaves in a diametrically opposed way to education, with residence in urban areas of 2,000 to 500,000 generally associated with more pro-Shari'a views than rural areas. This may be picking up some of what other observers have noted with respect to Islamism's popularity in medium-city regions like the Nile delta.

The results for age are somewhat less conclusive, but are the only major predictor to differ markedly from the religiosity model's findings. In the second Shari'a model, those aged 25-54 seem less supportive of Shari'a than younger or older respondents, though the effect does not appear in model 1. This forms a notable contrast with the religiosity models, where older respondents seemed more religious than the 18-24s.

## Conclusion

We began our analysis with an overview of demographic theories of religious change, noting that both demographic and social sources of religious change need to be combined in order to yield a meaningful picture of future trends in religiosity and fertility in the Muslim world. First, we remark that trends at the macro level seem to diverge from those at the micro level. Most Muslim countries are working to reduce their fertility through family planning. Conservative Muslim regimes were more reluctant to embrace these changes, but have now begun to do so, the most dramatic case being post-revolutionary Iran. This is being resisted by radical Islamist factions, as with Ahmadinejad in Iran or the Taliban in Afghanistan, but thus far the valence of change in most Muslim societies is trending toward consolidated fertility decline.

These are, however, state-level trends. Move to the individual-level and the picture changes. True, increased education levels are associated with lower fertility among Muslim respondents in Islamic countries, as previous studies have found. But, contrary to some previous research, we find that both Muslim religiosity and support for Shari'a Law are associated with higher fertility, suggesting that there is potential for growth in the Islamist religious population of Muslim societies, though the impact of higher education may counteract this. There is also a complex relationship between

individual and national-level variables. The religiosity and education levels of a country, for example, seem to carry a different association with fertility at country and individual levels. This may reflect the conceptual difference between *relative* religiosity and education (possibly measured by individual responses) and *absolute* religiosity and education, as measured by aggregates.

We have spoken of demography, but what about the secularisation side of the equation? Secularisation, if rapid enough, could offset the demographic advantage of the religious. Here the signals are, again, mixed. Increased education seems to be linked to reduced religiosity and anti-Shari'a sentiment in Muslim countries while urbanisation appears to have the reverse effect (at least for cities with populations below 500,000). Age behaves in unexpected ways, with those over age 25 more religious than those under 25, yet simultaneously less supportive of Shari'a than the under 25s.

No pattern of generational secularisation can be read off the age coefficients as is the case, by contrast, in Catholic Europe, where each birth cohort seems much less religious than the previous. Aggregate indicators of fertility and education behave more similarly to individual-level ones than in fertility models, but higher GDP per capita predicts greater rather than weaker support for Shari'a Law among Muslims in a given country. This may be an artefact of a cross-sectional model in which religious middle Eastern countries are wealthier and better educated than less religious and/or moderate Asian and sub-Saharan African Muslim societies. Overall, this research does not point to any trajectory of inevitable 'secularisation' (i.e. a decrease in Muslim religiosity or support for Shari'a) as the population becomes better educated, wealthier and more urban. The trends suggest stability, with certain forces of

modernisation (notably urbanisation) pulling in a religious direction while other forces, especially education, lean toward a more secular path.

It is evident that religious literalism will not receive the demographic boost in the Muslim world that it has in Israel. That said, it seems possible that fertility dynamics could power increased religiosity and Islamism in the Muslim world in the twenty-first century in the same slow-moving way as transpired among evangelical Protestants in the twentieth century United States and as appears to be taking place among religious Europeans. This will be the subject of further research based on a wider array of data and cohort component population projections that are sensitive to parameters of fertility, migration, religious apostasy, sex and age-specific differences and mixed-faith marriage rates.

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## Appendix 1: Derivation of 'Religious Belief' Principal Component

(varimax rotation)

Rotated Factor Loadings

Variable	1	Uniqueness
God	0.65178	0.57518
Life After Death	0.79684	0.36505
Soul	0.78526	0.38337
Hell	0.82009	0.32745
Heaven	0.87831	0.22858

Eigenvalue: 3.12; 62% of variation

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<sup>1</sup> Calculated from the World Values Survey question, 'are you a religious person?' (yes/no/atheist).

<sup>2</sup> This was confirmed in multivariate tests.

<sup>3</sup> Of course, Kurds tend to be more religious than average, so a religious effect may operate indirectly.

<sup>4</sup> Religiosity was significant at the .05 level, but only barely so ( $t=2.04$ ). Marital status and education levels dominated the model.

<sup>5</sup> Total fertility rate, by contrast, did not come up significant in this model, even with the variable for proportion aged over 65 removed.

<sup>6</sup> The question reads: 'Think about what should change to make your country a better place to live, and please tell us if you agree strongly, agree, disagree, or disagree strongly with the following. Saudi Arabia will be a better society: If the number of children born to families declined.

1) Agree strongly, 2) Agree, 3) Disagree, 4) Strongly disagree, 9) DK.' (ARDA 2005 Codebook)

<sup>7</sup> Now, I would like to know your views about a good government. Which of these traits should a good government have? It should implement only the laws of the Shari'a. 1) Very important, 2) Important, 3) Somewhat important, 4) Least important, 5) Not important, 9) NA.'

<sup>8</sup> I'm going to describe various types of political systems and ask what you think about each as a way of governing this country. For each one, would you say it is a very good, fairly good, fairly bad or very bad way of governing this country? Having an Islamic government, where religious authorities have absolute power. 1) Very good, 2) Fairly good, 3) Fairly bad, 4) Very bad, 9) DK'. ' (ARDA 2005 Codebook)

<sup>9</sup> The data seem to show that extreme Islamo-skeptics are somewhat more supportive of pronatalism, but the numbers in these categories were so small as to render them unreliable.