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Fertility and Religiousness Among European Muslims

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There seems to be a popular belief that Muslim fertility in Europe is much higher than that of non-Muslims. Part of this belief stems from the general impression of high fertility in some Muslim countries in the Middle East, Asia and Africa. This notion is typically transferred to Muslims living in Europe with their increasing migration along with concerns about numbers and assimilability into European society.

I

The first part of this paper addresses the question of how much difference there is between Muslim and non-Muslim fertility in Europe (in those countries where such information is available). At the beginning of the 21st century, there are estimated to be approximately 40 – 50 million Muslims in Europe. Almost all of the Muslims in Central and Eastern Europe live in the Balkans. (Kosovo, although formally part of Serbia, is listed as a country in Table 1).

In Western Europe the majority of Muslims immigrated after the Second World War. The post-war economic reconstruction and boom required considerably more labor than was domestically available. There were two principal types of immigration to Western Europe: (a) from countries of the respective former colonial empires; and (b) from Southern Europe, the former Federal Republic of Yugoslavia and Turkey. As much of this immigration took place during the 1950s and 1960s large proportions of present-day Muslims are second and third generation descendants. Immigrants to France came mostly from the former North African colonies Algeria (± 35 percent), Morocco (25 percent) and Tunisia (10 percent), and also from Turkey (10 percent). Most British Muslims originated in Pakistan and India, with smaller numbers from Bangladesh, Turkey and Arab and North African countries. Most Muslims in Germany came originally from Turkey and the former Yugoslavia.

Some measurement issues

Only a limited number of European countries collect data on religion in population censuses and vital registration systems (Brown, 2000). Even in these countries fertility data are not readily available by religious denominations. Many more countries collect data on nationality, citizenship or countries of origin of immigrants. These classifications are frequently combined with fertility measures. We are working with the simplified assumption that all women who immigrated from countries with overwhelmingly Muslim populations are of the Islamic faith. In this paper the terms “Muslim” and “Islam” are used interchangeably to denote adherence to the Islamic faith. In the following tables we rely on whatever designation was used in the respective national sources.

Table 1
Estimates of Muslim populations in Europe between 2000 and 2005.

Region, Country	*Muslim population*		*Region, Country*	*Muslim population*	
	In thousands	*Percent of total population*		*In thousands*	*Percent of total population*
Europe	**40 - 50 000**	**6 - 8**			
Western Europe			***Eastern & Central Europe***		
France	5 - 6 000	8 - 10	Kosovo	1 800	90
Netherlands	945	7	Albania	2 200	70
Denmark	270	5	Bosnia & Herzegovina	1 500	40
Austria	340	4	Macedonia	630	30
Belgium	375	4	Bulgaria	900	12
Germany	3 000	4	Serbia & Montenegro	540	5
Switzerland	311	4	Slovenia	48	2
United Kingdom	1 620	3	Croatia	45	1
Spain	300	3	Hungary	60	<1
Sweden	300	3	Romania	68	<1
Italy	825	1 - 2			
Norway	50	1	***Russian Federation***	***15 - 20***	***10 - 14***

Sources: Various official statistical agencies, many summarized in BBC News "Muslims in Europe: Country Guide", December 2005 (http://news.bbc.co.uk/2/hi/in_depth/europe/2005/muslims_in_europe/default.stm); MSNBC, Islam in Europe (http://www.msnbc.msn.com/id/12757599/)

Statistical agencies use two types of definitions to classify immigrants: foreign-born and persons of a foreign nationality or foreign citizenship. To be of foreign nationality or foreign citizenship is substantively identical, yet different countries use different terminology. The group of foreign nationals or citizens no longer contains persons that have been naturalized. As the naturalization laws and practices differ, the comparability of groups of immigrants between countries might be compromised, but it is not possible to determine the extent of the bias.

Countries with data on religious affiliation

According to data derived from the 2001 Austrian census (Table 2), Muslim women had a total fertility rate (TFR) of 2.3 births per woman, compared to a TFR of 1.3 for Roman Catholic women who comprised 86 percent of the female population. In 2001 Muslim women had on average of one child more than women of other religions. This differential was smaller however than 10 or 20 years earlier. While Muslim women in Austria had increased from 0.9 to 4.6 percent between 1981 and 2001, their TFR declined from 3.1 to 2.3 and the absolute TFR differential between Muslim and other women also declined. The relative relations between TFRs of different religions remained stable.

Table 2
Total fertility rate, by religion, Austria, Bulgaria, Croatia, Slovenia and Ukraine, 1991 to 2003.

a. Austria

Religion	1981		1991		2001		Difference between Islam and other religions		
	TFR	Share of total	TFR	Share of total	TFR	Share of total	1981	1991	2001
Roman-Catholic	1.70	85.7	1.52	78.8	1.32	74.5	1.39	1.25	1.02
Protestant	1.51	5.8	1.37	5.1	1.21	4.5	1.58	1.40	1.13
Islam	3.09	0.9	2.77	1.9	2.34	4.6			
Other religion	1.70	3.4	1.61	7.1	1.44	6.2	1.39	1.16	0.90
No religion	1.12	4.2	1.04	7.1	0.86	10.2	1.97	1.73	1.48
Total	1.67	100.0	1.51	100.0	1.33	100.0			

Source: Goujon, et al. 2006

b. Bulgaria – 2001 Census

Religion	Age Group	Children ever born (women 15+)	Share of total	Difference between Muslims and Orthodox
Orthodox	All	1.26	83.2	0.31
Muslim	All	1.57	11.9	
Orthodox	40-44	1.77	82.4	0.53
	50-54	1.82	86.7	0.74
	60-64	1.76	87.6	1.09
Muslim	40-44	2.30	12.5	
	50-54	2.56	9.5	
	60-64	2.85	9.3	

Source: National Statistical Institute 2003

c. Croatia – 2001 Census

Religion	Children ever born (women 15+)	Share of total	Difference between Muslims other religions
Roman Catholic	1.63	87.6	0.12
Orthodox	1.36	5.0	0.39
Muslims	1.75	1.1	

Source: Central Bureau of Statistics 2002

d. Slovenia – Completed fertility of birth cohorts, 2002 Population Census

Birth Cohort	Islamic	Catholic	Difference
1927-31	4.68	2.18	2.50
1932-36	3.89	2.17	1.72
1937-41	2.96	2.12	0.84
1942-46	2.76	2.07	0.69
1947-51	2.59	2.04	0.55
1952-56	2.28	1.97	0.31
1957-61	2.15	1.95	0.20
1962-66	2.04	1.85	0.19

Source: Šircelj 2006

e. Ukraine – Ukrainian Longitudinal Monitoring Survey, 2003

Religion	Children ever born (women 15+)	Share of total	Difference between Muslims and other religions
Orthodox	1.51	68.6	0.26
Catholic	1.61	9.6	0.16
Protestant	1.69	1.2	0.08
Islam	1.77	0.6	

Source: Kyiv International Institute of Sociology 2003

For the other countries in Table 2, we have data on children ever born (CEB). In Bulgaria, Muslim women who comprised 11 percent of the female population had an average 1.6 CEB compared to 1.3 CEB of Orthodox women who constituted 83 percent of the population. Data are available that permit estimates of completed fertility for certain cohorts. Orthodox women born around 1940, 1950 and 1960 had stable completed fertility around 1.8 births per woman. Completed fertility of Muslim women was higher. In the 1940 cohort their fertility was 2.9 births per woman, a difference of 1.1 births. Contrary to the Orthodox, Muslim cohort fertility was declining and the differential was narrowing; in the 1960 cohort Muslim women had only 0.5 births more than Orthodox women.

According to the 2001 Census in Croatia, Muslim women had 1.8 CEB compared to 1.6 by of Roman Catholic women, which was the dominant religion.

In Slovenia, Muslim women comprised about 2.4 percent of the population with completed fertility of the cohorts born in the late 1950s and early 1960s estimated between 2.0 and 2.2 births per woman. Completed fertility of Roman Catholic women, the principal religion, was estimated at 1.8 – 1.9 births per woman for the same cohorts. The fertility of Catholic women had been stable from one generation to the next. Among women born around 1930, Catholic completed fertility was 2.2 births per woman and moderately declining to slightly below 2.0 for the cohorts of the 1950s and early 1960s. Muslim women of the younger cohorts of the early 1960s had significantly lower fertility than their mothers. The Muslim cohort born around 1930 had completed fertility of 4.6 births compared to about 2.1 births per woman of the 1960s cohorts, a difference of 2.5 births.

In the Ukraine in 2003, the population of Islamic faith was less than one percent of the total and the number of children ever born (1.8) was slightly higher than for women of other religions.

Countries with data on foreign-born immigrants and those of foreign citizenship or nationality

Most of the women, presumably of Islamic faith, in France immigrated from North Africa, namely from Algeria, Morocco and Tunisia as well as from Turkey. Their TFRs in the 1990s were higher than the TFR of native French women by 0.9 to 1.5 births per woman (Table 3).

In the Netherlands in 2005, the TFR of immigrant women born in Morocco was 2.9 and that of women born in Turkey 1.9 births per woman, compared to 1.7 of native Dutch women (Table 3). There had been a steep decline of fertility of the women born in Morocco and in Turkey over the past 15 years, whereas the TFRs of the native Dutch changed only moderately. Fertility of Muslim women in 2005 continued to be higher than that of Dutch women, but the differential has narrowed. For women of Turkish origin the differential had almost disappeared. It declined from 1.6 births per woman in 1990 to 0.2 in 2005.

Table 3
Total fertility rate, by country of origin, France, Netherlands, Norway and England & Wales, 1971 to 2005.

a. France

Period	TFR of women born in				
	France	Algeria	Morocco	Tunisia	Turkey
1991 – 1998	1.70	2.57	2.97	2.90	3.21
	Fertility difference between French and immigrants				
		0.87	1.27	1.20	1.51

Source: Toulemon 2004

b. Netherlands

Year	TFR by country of birth			Difference between natives and foreign born	
	Netherlands	Morocco	Turkey	Morocco	Turkey
1990	1.55	4.90	3.15	3.35	1.60
1995	1.47	3.37	2.46	1.90	0.99
2000	1.65	3.22	2.18	1.57	0.53
2005	1.68	2.87	1.88	1.19	0.20

Source: Statistics Netherlands 2006

c. Norway

Period	Total fertility rate of women born in							
	Norway	Somalia	Iraq	Morocco	Pakistan	Turkey	Iran	Bosnia & Herzegovina
1994-1995	1.8	5.5	4.0	3.8	3.6	2.8	1.9	2.2
1997-1998	1.8	5.2	4.8	3.8	3.6	3.1	1.9	1.6
	Fertility difference between Norwegians and immigrants							
1994-1995	-	3.7	2.2	2.0	1.8	1.0	0.1	0.4
1997-1998	-	3.4	3.0	2.0	1.8	1.3	0.1	-0.2

Source: Byberg 2002

d. England & Wales

Year	TFR by country of birth			Difference between natives and foreign born	
	England & Wales	India	Pakistan & Bangladesh	India	Pakistan & Bangladesh
1971	2.30	4.30	9.30	2.00	7.00
1981	1.70	3.10	6.50	1.40	4.80
1991	1.80	2.60	5.00	0.80	3.20
1996	1.67	2.21	4.90	0.54	3.23

Source: Coleman, et al. 2002

Muslim women in Norway came from a large number of countries that together amounted to about 2.5 percent of the total population. Their fertility differed significantly by country of origin (Table 3). In the period 1997-98 the TFRs ranged from 1.6 births per woman for those who were born in Bosnia & Herzegovina to 5.2 for Somalia born women. For the majority of the Muslim women fertility was considerably higher than that of native women.

In England & Wales panel in Table 3 there are two categories for foreign-born women: India, and Pakistan & Bangladesh. The assumption about most women coming from the respective countries being of the Islamic faith holds for the latter group but not for India. Brown (200:98) estimates that seven percent of Indians living in Britain and about 96 percent of the Pakistanis and Bangladeshis were Muslims. The TFR of the almost exclusively Islamic women from Pakistan & Bangladesh in 1996 was 4.9 births per woman compared to 1.7 of native-born women, a difference of 3.2 births. Women born in India had a TFR of 2.2, which was higher by 0.5 births than that of native-born women. Among both groups of foreign-born women fertility had declined considerably between 1971 and 1996 and thus also differentials became smaller. Nonetheless, even in 1996 the fertility of Pakistani & Bangladeshi women was three times higher than that of native-born women.

About 3.5 percent of the Belgian population was of the Islamic faith early in the 21st century. Most of the immigrants came from Turkey and Morocco. In 1994 their fertility was

more than twice that of women of Belgian nationality (Table 4). The usual pattern of declining fertility of immigrants holds. The TFR differential declined form 3.4 to 1.8 between 1981 and 1994 for women of Turkish nationality, and from 4.2 to 2.4 births per woman for Moroccan nationals, although smaller but still a sizable difference (Table 4).

In Germany, Turkish immigrants constitute a large part of the foreign nationals. Their TFR declined from 4.4 births per woman in 1970 to 2.4 in 1996 (Table 4). The differential thus fell from 2.4 to 1.0 birth per woman.

Nationals of the former Yugoslavia form a meaningful part of Swiss immigrants but it is questionable what proportion of them was of the Islamic faith. This is the single group of immigrants whose fertility has not followed the usual pattern of decline over time (Table 4). On the other hand, Turkish nationals in Switzerland do fit the usual pattern of decline. Their TFR fell from 3.4 births per woman in 1981 to 1.9 in 1997. This was 0.6 above the TFR of Swiss nationals.

Early in the 21st century Italy still had a relatively modest proportion of Muslim citizens estimated at 1.4 percent of the total population. These came mainly from Northern Africa and Albania (Table 4). Their TFRs were between double and triple that of Italian citizens.

Table 4
Total fertility rate, by nationality or citizenship, Belgium, West Germany and Switzerland 1970 to 1997.

a. Belgium

Year	TFR by Nationality			Difference between natives and foreign born	
	Belgian	Turkish	Moroccan	Turks	Moroccans
1981	1.57	4.95	5.72	3.38	4.15
1991	1.60	3.50	4.17	1.90	2.57
1994	1.50	3.30	3.91	1.80	2.41

Source: Poulain and Perrin 2002.

b. West Germany

Year	TFR by citizenship		Difference between natives and foreign born
	German	Turkish	
1970	2.01	4.40	2.39
1980	1.44	3.60	2.16
1985	1.28	2.53	1.25
1996	1.39	2.40	1.01

Source: Mammey and Scwarz 2002

c. Switzerland

Year	TFR by nationality			Difference between natives and foreign born	
	Swiss	Former Yugoslavia	Turkish	Former Yugoslavia	Turkish
1981	1.52	-	3.36	-	1.84
1983	1.51	2.08	3.04	0.57	1.53
1990	1.55	2.92	2.76	1.37	1.21
1997	1.34	2.41	1.91	1.07	0.57

Source: Wanner 2002

d. Italy

Year	Total fertility rate by citizenship				
	Italy	Morocco	Albania	Tunisia	Egypt
1999	1.26	3.40	2.60	3.30	3.40
	Fertility difference between Italians and immigrants				
1999	-	2.14	1.34	2.04	2.14

Source: National Institute of Statistics 2002

Findings

- Fertility of Muslims in practically all the countries with available data is higher than that of the dominant religion or, when based on data of immigrants from Muslim countries, is higher than that of the native population. Taking the most recent available data, in some cases the difference is only around 10 percent, as in Croatia according to the 2001 census, and in the Netherlands women born in Turkey in 2005. On the high side, in Norway fertility of women born in Somalia was 2.9 times higher than that of native women; similarly in England & Wales fertility of women born in Pakistan and Bangladesh was 2.9 times above that of native women.

- The effect of higher fertility of Muslim women on overall national fertility tends to be relatively small, because of the small proportions of Muslim women in most countries.

- The fertility of Muslim women is declining in all the countries for which data are available. With the passage of time Muslim fertility moves closer to the fertility of the majority of the population in the respective countries.

- Wherever there are immigrants from a number of Muslim countries there is a range of fertility levels. In other words, the fertility of Muslim women tends to be heterogeneous. At the same time, women of the same country of origin tend to have similar levels of fertility in different countries of destination. For instance, Turkish women in various countries (France, Netherlands, Norway, Belgium and Switzerland) in the 1990s all had a TFR around three births per woman.

II

The first part of this paper addressed the question of how much difference there is between Muslim and non-Muslim fertility in Europe (in those countries where such information is available). The conclusion is that Muslim fertility is indeed higher than that for the dominant population especially where the influx is from the least developed countries, but that it is declining over time.

The second part of the paper focuses mainly on the influence of religiousness on fertility raising the question of whether Muslims in Europe are more religious than the dominant non-Muslim populations and whether this is the primary source of their higher fertility. The data to answer this question, which are inadequate in various ways, are based on surveys in different countries, particularly the European Values Study. Because of the small numbers of Muslims in the European Values Study, we have combined the latest three surveys conducted between 1990 and 2000 which yields a total of 477 Muslim women ages 18-44 living in Europe (excluding Albania). How representative they are of Muslim women living in Europe is questionable. Most of those included in the surveys live in Macedonia, Bosnia, Bulgaria, Russia and Belgium with inadequate representation in the UK, France, Germany and several other western nations. Albania, which included 404 Muslim women in the combined EVS surveys, is analyzed separately because the country is predominantly Muslim unlike their minority status elsewhere in Europe.

Islam and Birth Control

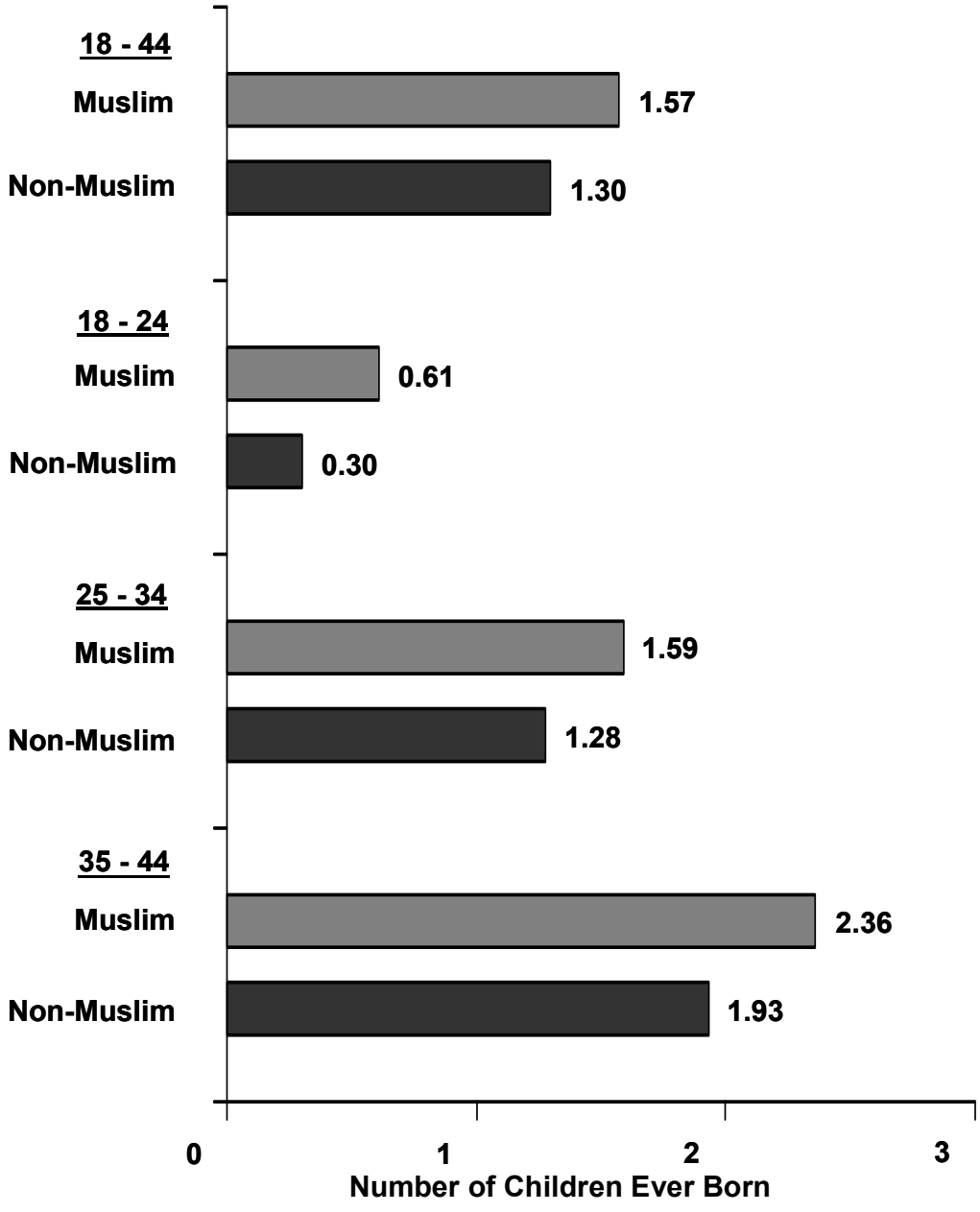
Unlike the Catholic Church, there is no simple central authority in Islam that corresponds to the Vatican. Pluralism seems to be the key. With regard to contraception, the most appropriate generalization is that it is permissible though not typically advertised as such. But even this is changing. In Pakistan it was recently announced that mosques "will soon distribute contraceptives and literature to spread awareness about the importance of family planning and safe sex" (Indo-Asian News Service, 12/18/06). Some 22,000 clerics "will be appointed to spread the message of the benefits of a small family" according to the federal population planning minister. This development is said to be borrowed from Bangladesh which has for decades promoted aggressive family planning policies. The most significant evidence is that contraceptive behavior is widespread in many Muslim countries and fertility has declined substantially in such countries as Indonesia, Egypt, Bangladesh, Iran and several North African countries.

An important dimension of Islam is the strong emphasis on family which, of course, does have pronatalist implications. Traditional values still prevail and are reflected in views about the status of women. But all of this is in a state of flux with modernization, increasing education, and secularization, influenced by increasing exposure to the mass media.

Religion and Fertility

The average number of children ever born to the Muslim women 18-44 in Europe is slightly higher (1.6) than for non-Muslim women (1.3) (Figure 2.1). This difference is consistent at different ages. Toward the end of the reproductive age span, ages 35-44, Muslims have had 2.4 births compared to 1.9 for other women.

Figure 2.1

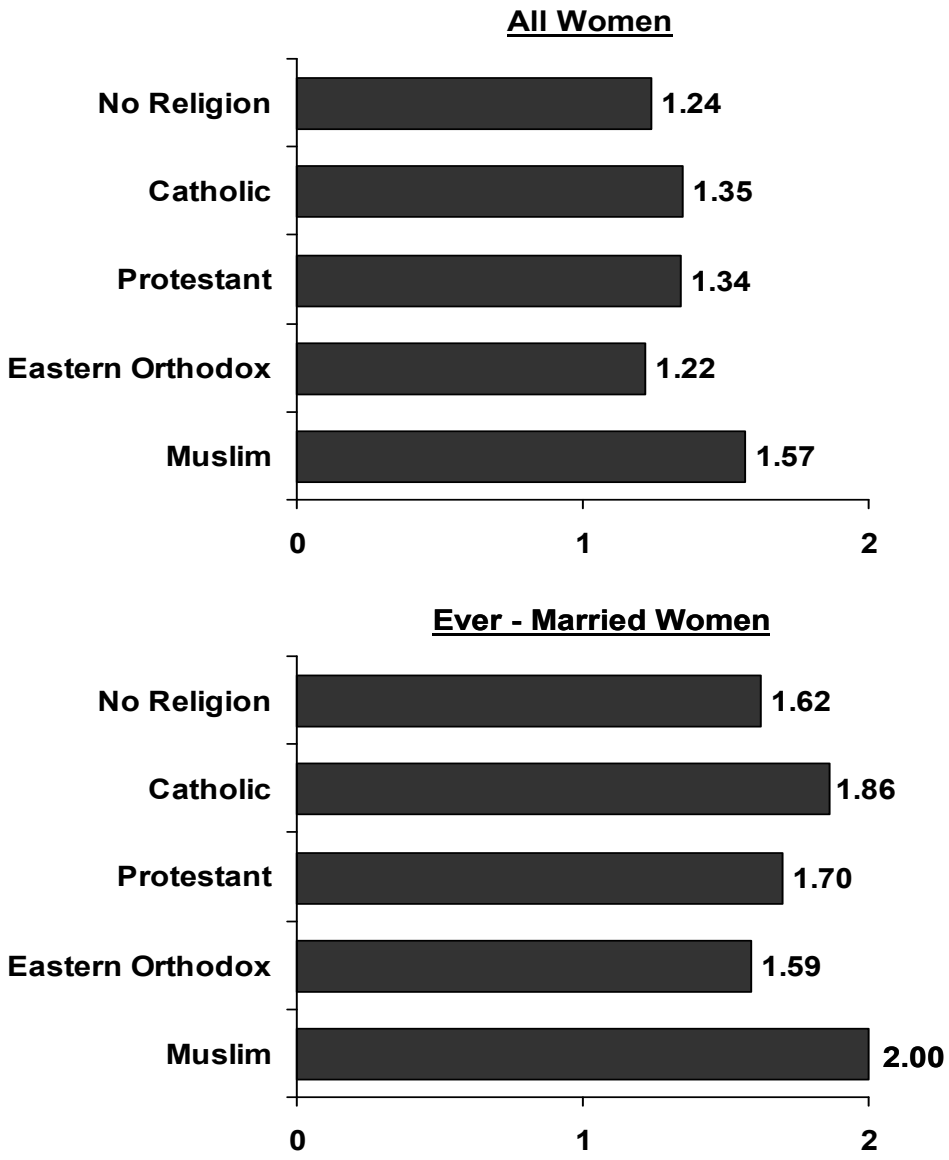


Mean number of children ever born to Muslim and non-Muslim European women by age

Source: European Countries of the World Values Surveys of 1990, 1995-97, 1999-2000.

The Muslim women (18-44) in Europe have a higher proportion married – 68 percent ever married compared with 62 percent in all Europe. The differences in fertility are shown in Figure 2.2 both for all women and for ever-married women. Although fertility for all women is higher for Muslims, the fertility of ever-married Muslims is close to that of ever-married Catholics (2.0 and 1.9 respectively). However, when confined to ever-married women 35-44 (not shown), the Muslim women have had 2.5 births and Catholic women 2.2. Differences in marital behavior are important in understanding higher Muslim fertility.

Figure 2.2
Mean number of children ever born to all women 18 – 44 and to ever-married women by religion



Source: European Countries of the World Values Surveys of 1990, 1995-97, 1999-2000.

Comparative Religiousness

By almost every measure, Muslim women are more religious than women of other religions (Figure 2.3). They show the highest proportions who: think religion is important, who feel that they are religious, who believe in God, who find comfort in religion, who believe in heaven and in hell, in the devil, in sin, in a soul (the same as for Catholics), who pray often outside of religious services, and believe in the importance of God. The only exceptions are that more Catholics report being raised religious and attending services at least once a month. These findings are similar in an analysis of the European Social Surveys of 2002 and 2004 that add frequency of prayer and a self-rating scale of religious self-image which also show Muslim women as the most religious.

Figure 2.3
Percent of European women 18 – 44 by different measures of religiousness, by religion

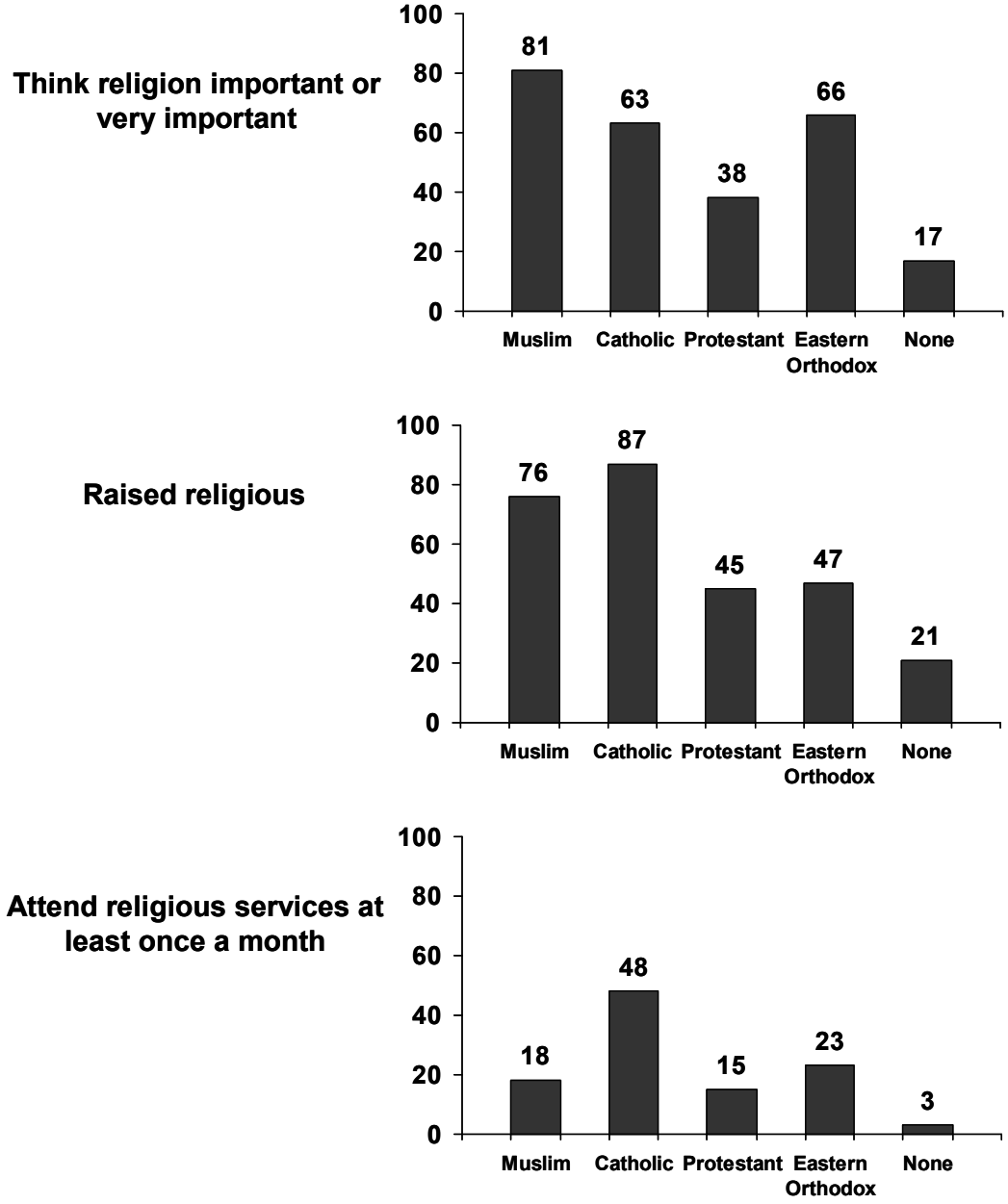
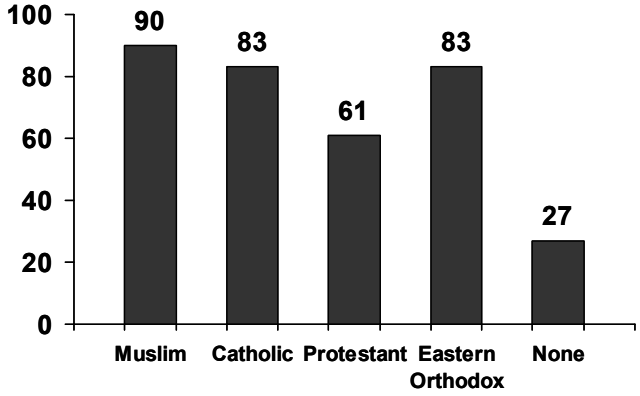
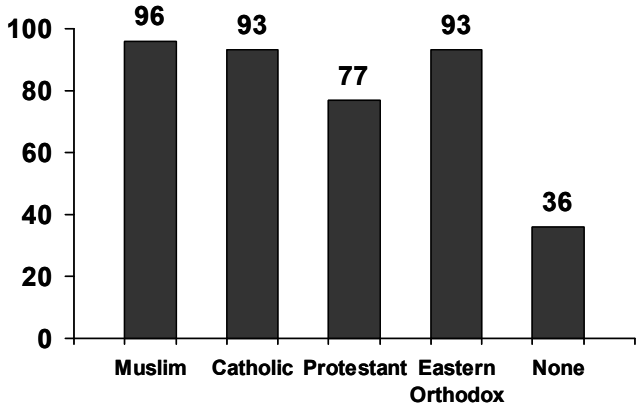


Figure 2.3, Continued

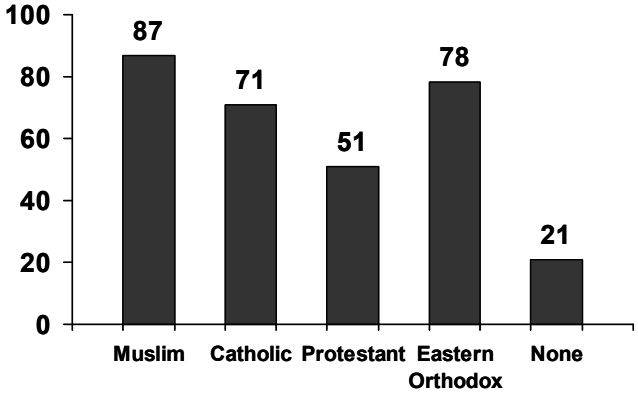
Feel they are religious



Believe in God



Find comfort in religion



Believe in heaven

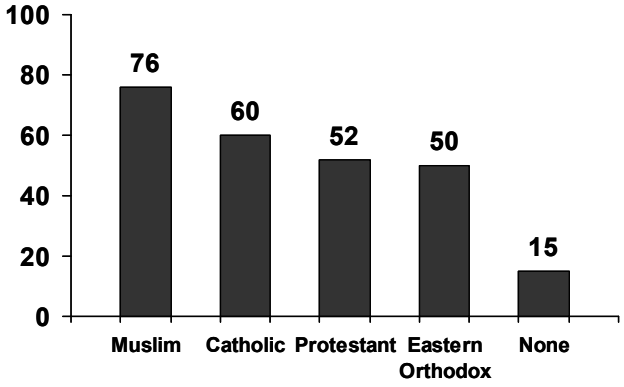
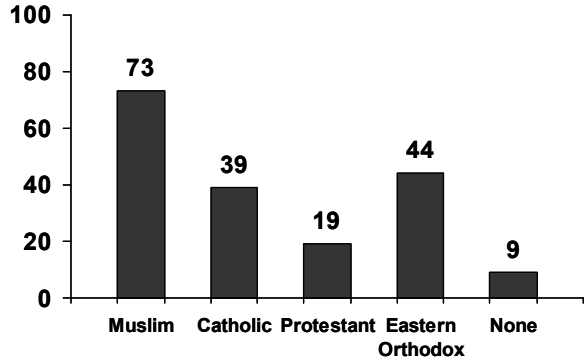
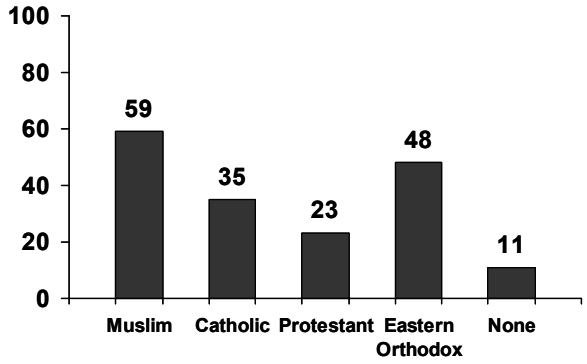


Figure 2.3, Continued

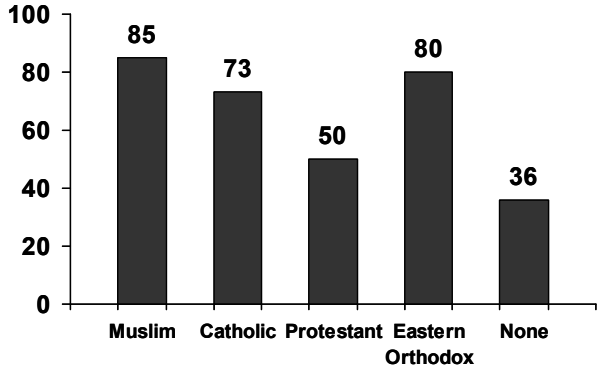
Believe in hell



Believe in the devil



Believe in sin



Believe in a soul

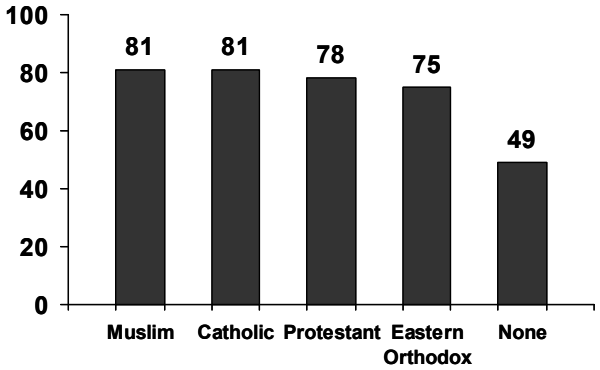
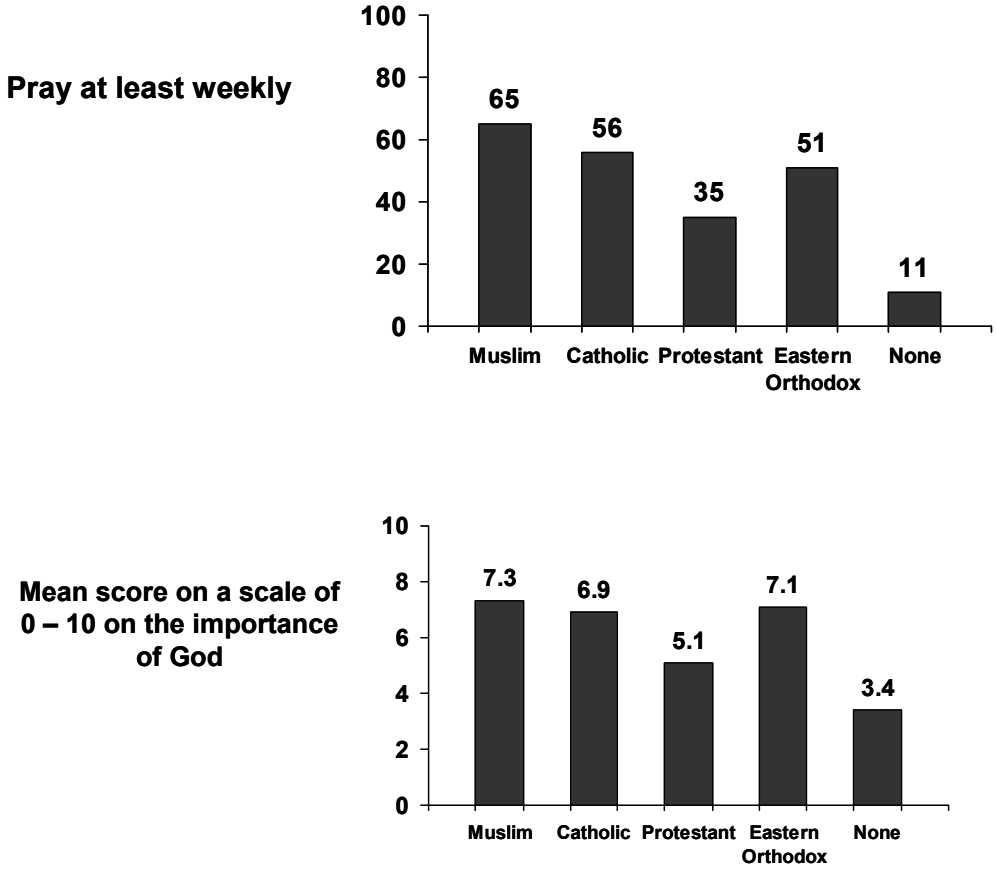


Figure 2.3, Continued



Source: Combined samples of the European Value Study: 1990, 1995-97, 1999-2000

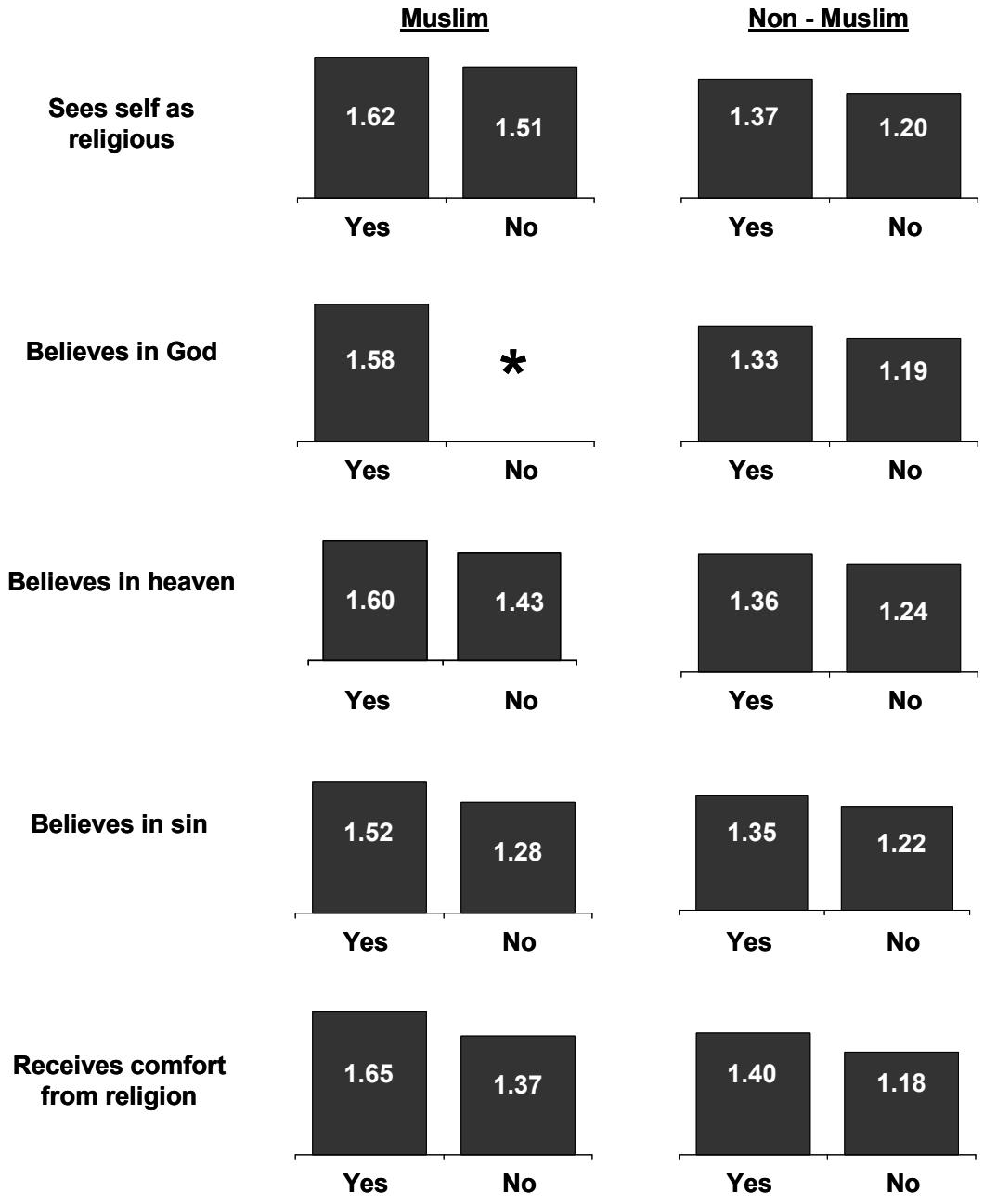
Religiousness and Fertility

The number of children ever born is tabulated for several of these measures of religiousness in Figure 2.4. It shows that more religious women have more children than those less religious, a pattern that prevails both for Muslims and non-Muslims. The fertility of Muslim women is slightly higher than for non-Muslims both for the more and for the less religious women.

Similar analyses were conducted based on the more recent European Social Surveys of 2002 and 2004. A total of 280 Muslim women (18-44) out of a total of nearly 19,000 women were in these two surveys combined. In contrast to the EVS, the UK, France, Belgium and the Netherlands were more represented among Muslims in the ESS. The main problem with the ESS, however, is that there was no direct question on the number of children ever born. A crude substitute was derived from the household roster and from a question about children who no longer lived in the household but this measure seems to underestimate the number of children ever born (based on a comparison with the EVS data).

Nonetheless, the ESS analysis yields very similar results with those reported above. Muslim fertility is somewhat higher than that of non-Muslims (about 15 percent higher), the Muslim women are more religious than non-Muslims, and fertility is slightly higher among the more religious Muslims than among those less religious.

Figure 2.4
Mean number of children ever born by religious beliefs



Sources: Combined European Values Surveys: 1990, 1995-97, 1999-2000.
* Base too small

Family Values

In a recent essay on religion, family and fertility focused on high Muslim fertility in Israel, Calvin Goldscheider stresses the importance of strong family values within that culture rather than on fatalism or formal religious dogma. In particular: "Values that emphasize the subordinate role of women within households and gender hierarchies appear to be critical in sustaining high fertility levels." (p.46 in Goldscheider) He reasserts this proposition in his conclusions: "Therefore, the search for understanding why some religious groups have distinctive fertility patterns, and why religion is a major determinant of fertility levels, should not begin with a review of the theological pronouncements of religious institutions about fertility and family size, or about contraception and birth control but rather about family values and gender roles." (p.56)

There are data in the European Value Surveys that bear on this subject including questions about family values and gender roles. A comparison of the distributions of responses to such questions by religious denomination shows that Muslim women (18-44) consistently indicate the more traditional attitudes. Although there may be some ambiguity in any single indicator, the fact that Muslims are at the most conservative extreme on all of the items strongly suggests that their value system differs in the traditional direction. Muslim women are more likely than women of other religions to:

- Disapprove of women as single parents
- Prefer a boy if there was only one child
- Feel that a housewife's role is just as fulfilling as paid work
- Feel that men have more of a right to a job if jobs are scarce
- Feel that the family is a very important institution
- Think that marriage is not an outdated institution
- Feel that a woman has to have children to be fulfilled

Figure 2.5
Mean number of children ever born by the index of family values, by religion

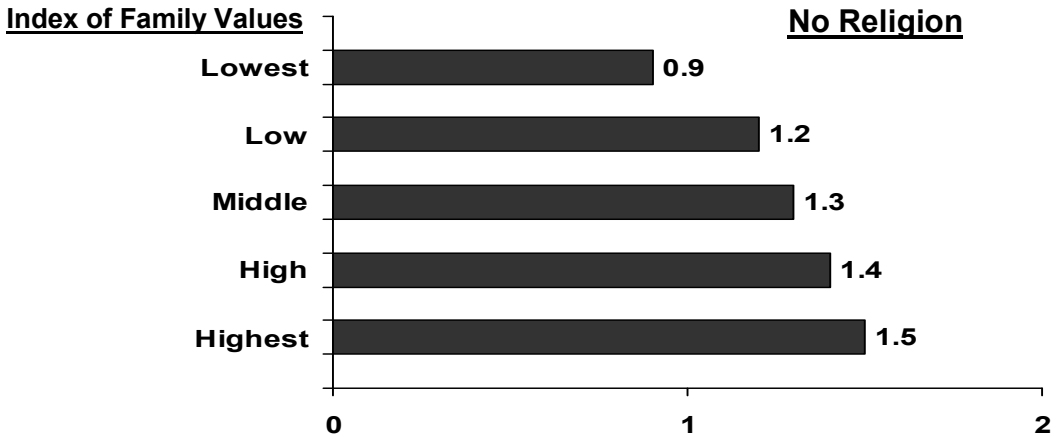
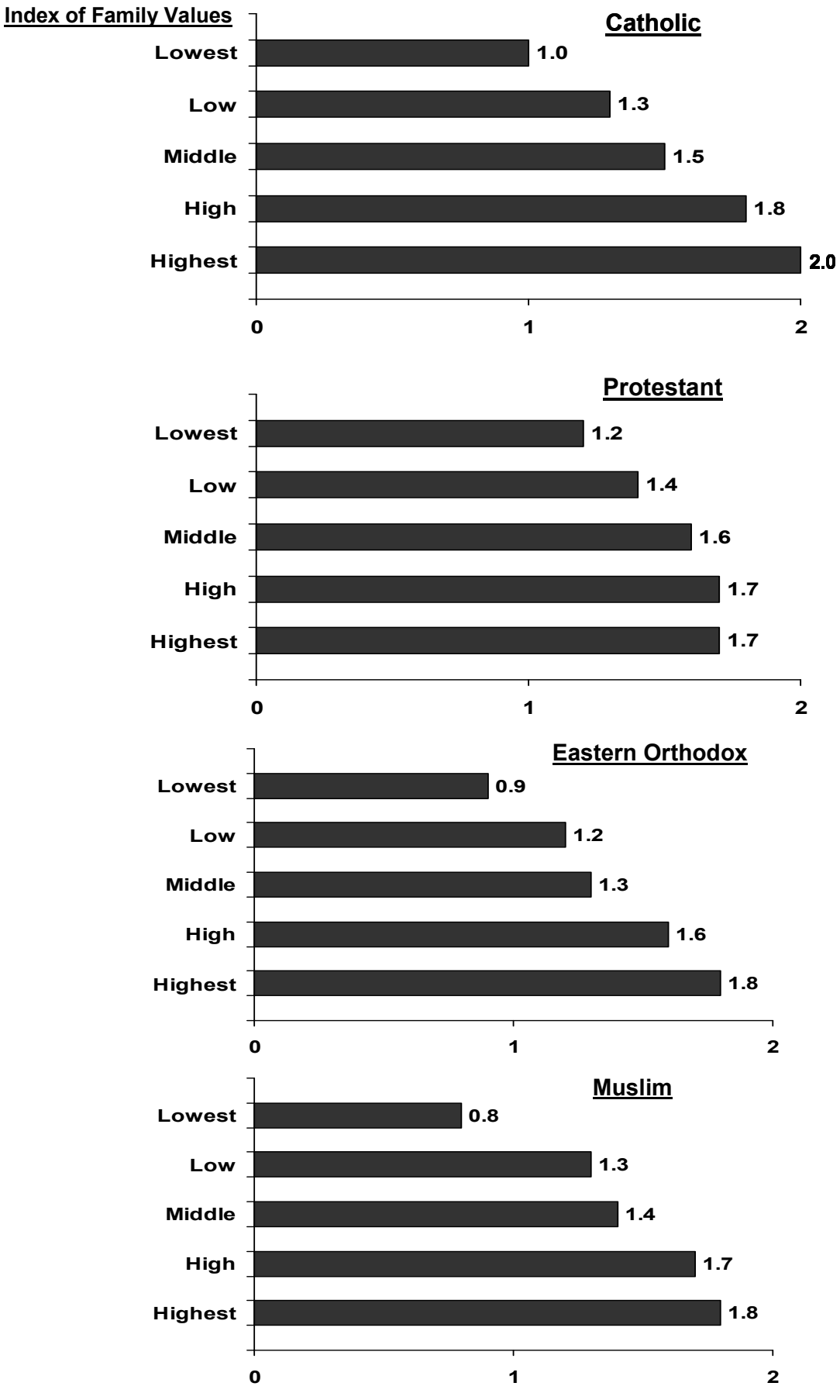


Figure 2.5, Continued



A simple summary index of these items was constructed. In Figure 2.5, the number of children ever born is shown by the score on this index. It is clear that fertility has a strong linear association with family values for each of the five religions. In fact, with the possible exception of the No Religion category, the average number of children ever born is very similar across the religions at each level of the index. What distinguishes the Muslim women is the fact that the family values index is about 20 percent higher for them than for non-Muslims. As many as 42 percent of the Muslim women are in the highest two categories of the index compared with 8 percent of Protestants, 15 percent of Catholics, 16 percent of women with No religion, and 17 percent of Eastern Orthodox women.

Figure 2.6
Proportion of women ever married by family values and religion

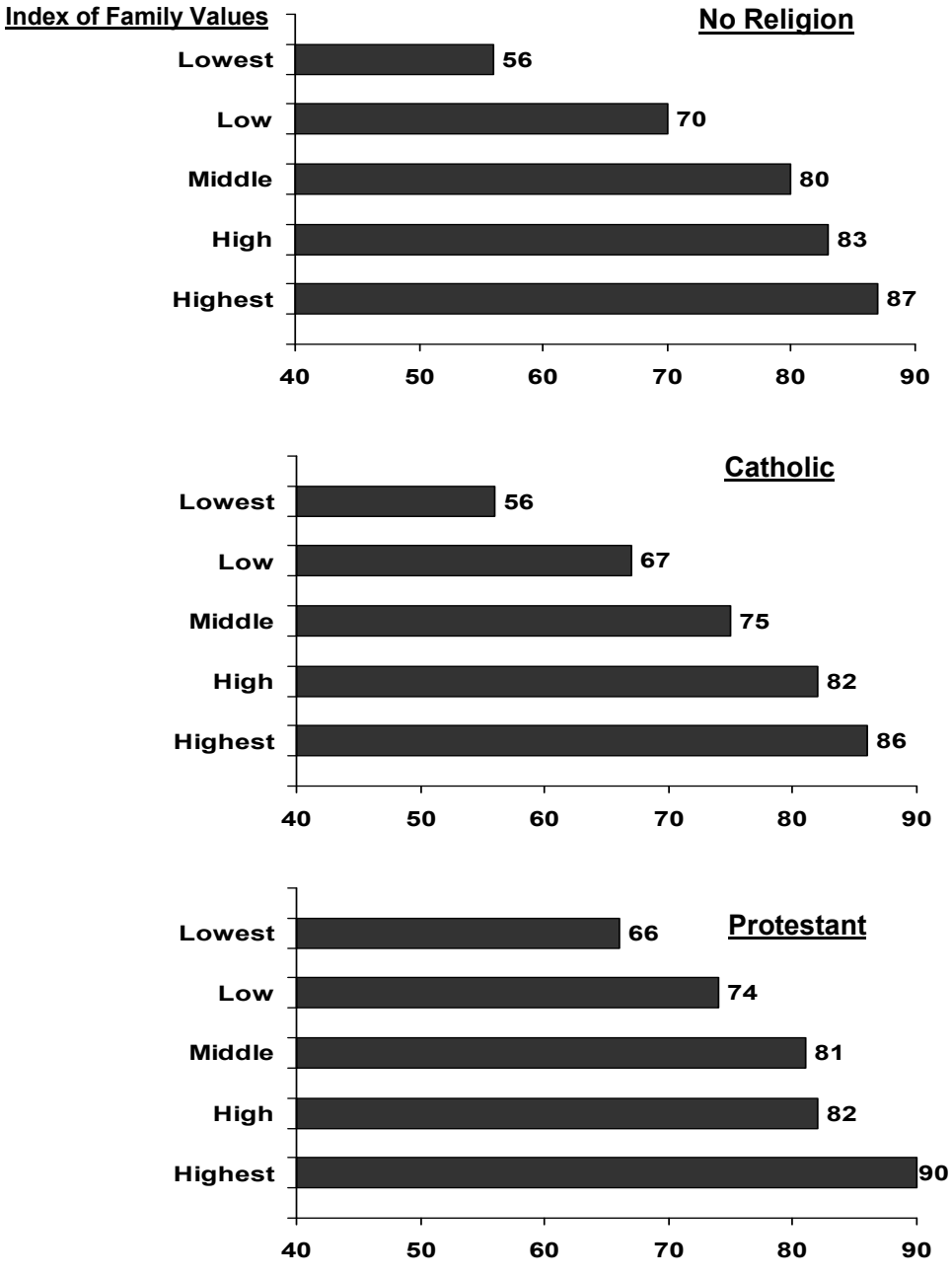


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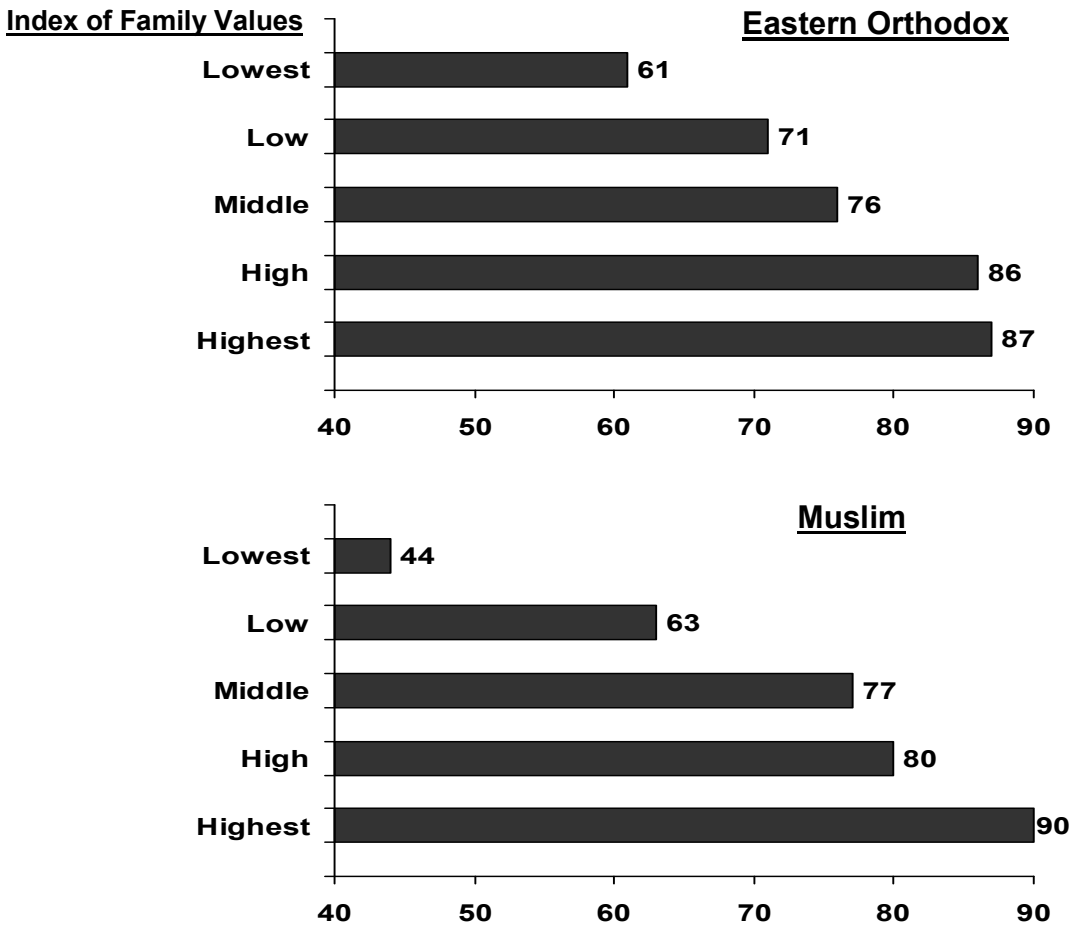
Figure 2.6, Continued



A large part of this association of family values with fertility is the result of the joint relationship with marriage (Figure 2.6). The proportion of women ever married is strongly related to family values especially among Muslim women where it ranges from 44 percent married at the lowest end of the scale to 90 percent at the highest end. Although strongest for Muslims, this association is also clearly present among women of other religions. The consequence is that when restricted to ever-married women, the association between family values and fertility remains but is considerably diminished (not shown). It should be noted that some part of these associations with family values might reflect marriage and fertility as well as being a determinant.

Multivariate Analysis

In a logit regression analysis (Table 5), with age controlled, the influence of religiosity on fertility is significant for all but the Eastern Orthodox women. It shows the strongest association for Muslims for whom there is a one-third greater likelihood of having two or more births if they are more religious (based on the summary index). In addition to religiosity, the family values

index also shows significant associations with fertility for all the denominations. Income shows no association with fertility. Education, on the other hand, is negatively associated with fertility except among Muslim women. Further examination of this reveals that there is the expected negative association with education among Muslims but its significance does not survive the imposition of the other covariates, especially income.

The important finding here is that both religiosity and family values are independently associated with fertility and that associations are particularly strong for Muslims.

Table 5
Odds ratios of having two or more children, by religious denomination.

	Muslims	Catholics	Protestants	E. Orthodox	None
Religiosity (4-item scale)*	1.35	1.11	1.06	NS	1.08
Family Values (5-item scale)**	1.43	1.22	1.32	1.29	1.15
Income	NS	NS	NS	NS	NS
Education					
Lower	1.00	1.00	1.00	1.00	1.00
Middle	NS	0.67	0.72	0.38	0.80
Upper	NS	0.39	0.59	0.25	0.59
Age (single years, 18 – 44)	1.17	1.17	1.15	1.15	1.14
Number of women	216	4156	2011	1735	2614
Chi squared	62	1294	544	471	545
R^2	0.210	0.225	0.196	0.200	0.152

*Based on responses to belief in God, in heaven, in sin and receiving comfort from religion
** Se text for description of items in this index.
Source: Combined European Value Study 1990, 1995-97, 1999-2000

Muslim Men

The EVS collected data for men as well as for women (not shown here). Comparisons for the 18-44 age group show that women are consistently more religious than men on all of the measures, a difference that exists for each religion. Similar to Muslim women, Muslim men are more religious than non-Muslims by every measure except frequency of church attendance and being raised religiously where Catholics show higher proportions.

Muslim Fertility in Albania

Albania is different from the other European countries included above in several respects. It is one of the least developed countries in Europe, Muslims are the large majority of the population rather than minorities in other European countries, and its fertility rate still remains the highest in Europe (2.6) though it has declined rapidly in recent decades.

The fertility of the Muslim population in Albania is no different from that of the Catholic women who comprise 11 percent of its population (based on the 2002 CDC national survey of reproductive health). The proportion of women married is higher for Muslim women – 62 percent than the 56 percent for Catholic women, though the marital fertility of Muslims is slightly lower than that of Catholics. According to the CDC survey, there is little difference in contraceptive practice by religion. Overall, 75 percent of the married women are using some method but most of this is withdrawal, which leads to a high abortion rate.

The only measure of religious behavior in the CDC survey is the frequency of attendance at religious services and this is not very useful since 57 percent only attend on holidays and 29 percent never attend. This crude distinction shows no association with fertility. Reverting to the recent EVS that do include the data on religiousness presented earlier, the evidence indicates that Albanian Muslim women are less religious than Muslim women living elsewhere in Europe on virtually every measure of religiousness. As elsewhere, the fertility of the more religious women is higher.

Summary of Survey Data Analyses

The analysis of Muslim religiousness and fertility based on surveys including Muslim women living in various European countries reveals the following associations:

- Muslim fertility is slightly higher than non-Muslim fertility;
- Higher proportions of Muslim women are married;
- Muslim women are much more religious;
- Fertility is directly related to religiousness for both Muslims and non-Muslims;
- Muslim women adhere more to family values than non-Muslim women;
- The odds of having at least two children are significantly greater for women who are religious and who hold strong family values.

These conclusions need to be qualified both because of the small samples of Muslim women in both the European Values Surveys and in the European Social Surveys and the questionable survey coverage of the different countries with Muslim populations.

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