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Are the Better Educated Less Likely to Support Militancy and Terrorism? Women Are.

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**Are the Better Educated Less Likely to Support Militancy and Terrorism?
Women Are.
Evidence from a Public Opinion Survey in Pakistan**

Abstract

I use 2009 public opinion survey data from Pakistan to show that the relationship between education and support for terrorism varies by gender. Specifically: 1) as women become more educated, they are less likely to support militancy relative to similarly educated men, whereas uneducated women are more likely to support militancy relative to uneducated men, controlling for religiosity, demographics, region, and terrorist events in the district; 2) the effect of women's education is driven by the years of schooling immediately preceding and following high school; 3) educated women have more negative views of the United States and are more likely to support terror attacks against the U.S. relative to educated men, and uneducated women have more positive views of the United States relative to uneducated men. I discuss possible omitted factors which could explain the results, and use the Altonji Elder Taber test to show that a causal explanation is plausible.

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1. Introduction

Terrorism emerging from Pakistan poses a threat to the rest of the world, and afflicts Pakistan itself, resulting in great loss of life (4447 people were killed in 476 major terrorist incidents in Pakistan in 2011ⁱ), and contributing to economic and political instability. Chief amongst the factors which enable terrorist groups to survive and function in any context are support and sympathy for these groups and their goals within the population and elements of the government. Support for militancy and terrorism can range from a set of passive activities to active participation. It ranges from condoning militant behavior and sympathy or agreement with the views and goals of terrorist groups to letting militants live in the community, harboring them, encouraging militant activity, and offering financial or logistical support to terrorist groups, etc. The fact that Osama bin Laden lived in a city like Abbottabad for years implies that he had at least the tacit support of some civilians and officials around him.

Why does support matter? It is logical that financial, logistical, and operational support for terrorism and militant groups is essential to these groups' operation and survival. Moreover, given that in many cases there are substantial monetary rewards for handing over terrorists to the authorities, even passive sympathy with militants living in the community is instrumental in allowing terrorist groups to persist. In addition, while only a tiny fraction of sympathizers or supporters go on to join any terrorist or militant organization, purportedly under great duress or extenuating circumstances, support is also a necessary first condition for potential recruitment. Support is also required from the families of recruits, since their permission (particularly the blessing of mothers) is sought before joining the organization and especially prior to a suicide mission (Abou Zahab 2007).

This paper uses public opinion data from Pakistan to identify the determinants of support for terrorist and militant groups and their goals (I treat the terms support for terrorism and terror groups interchangeably with support for militancy and militant groups). The United States and a host of other developed countries have committed a great deal of economic and development assistance to Pakistan based on the (unproven) conventional wisdom that the less educated and the poor are more likely to support terrorist organizations (and to be recruited by these organizations)ⁱⁱ. As part of the Enhanced Partnership with Pakistan Act of 2009, informally called the Kerry-Lugar-Berman Act, the U.S. committed to

providing \$7.5 billion in development assistance to Pakistan from 2009 to 2014, a sum renewable for the next five years. In congressional testimony, then Ambassador Richard Holbrooke (2009) urged lawmakers to “target the economic and social roots of extremism in western Pakistan with more economic aid.” Additional testimony claimed that this aid would help in “...countering radicalization by providing economic, social, educational, and vocational opportunities and life skills training to at-risk youth.” (U.S. Senate 2009)

There are two assumptions underlying the above statements: one, those less educated (and poor) are more likely to become terrorists, and two, the less educated (and poor) are more likely to support militancy and terrorism. It is assumed that aid will improve education and incomes, and the conventional wisdom is that this will in turn reduce recruitment towards and support for terrorismⁱⁱⁱ. The United States also hopes that aid will win over Pakistani hearts and minds and shift negative views of the U.S. While the evidence on aid effectiveness itself is unclear, the two assumptions outlined above also do not hold up against empirical tests. To identify the demographic factors which are associated with terrorist recruitment, biographical information on terrorists is required, random or representative samples of which are difficult to procure. This data is then compared to the population from which these terrorists originate. Analyses using data on terrorist groups such as Hezbollah, al-Qaeda, and Jewish underground groups (Krueger 2007) as well as Pakistani terror groups (Abou-Zahab 2007, Fair 2008) conclude that poverty and lack of education do not explain participation in terrorism. In fact, if anything, militants appear to be richer and more educated than the population^{iv}.

This paper focuses on testing the relationship between education and support for terrorism, as well as Pakistanis’ views of the U.S. It is the first in the literature to examine the determinants of support for terrorism and views of the United States in one place. Support for terrorism can be measured using survey data on views on militancy and terrorism. Polling surveys also typically contain information on demographics, which allow for identifying correlations of views with demographics. However, respondent-level data is not always released, resulting in analyses limited to basic summary statistics and cross-tabulations. The representativeness of the survey is an important quality concern. In particular, surveys and polls may suffer from high nonresponse rates (the percentage of the original sample which refuses to respond to the entire survey). In addition, surveys on sensitive issues usually suffer

from high rates of abstention from answering particularly delicate questions. In particular, respondents who abstain from answering (because of fear of negative repercussions) may have systematically chosen one of the responses, resulting in biased analysis based on such data. To compound the problem, particular demographic groups (women, the illiterate) may systematically abstain from responding, resulting in biased correlations with demographics.

A relatively recent but growing literature examines the determinants of support for terrorism using polling data in various contexts and concludes that poverty and lack of education do not explain support for terrorism^v (Krueger 2007). It is important to note that supportive or sympathetic views toward militancy may not necessarily translate into operational or financial support for militant groups, but given that representative information on the latter is almost impossible to procure, using expressions of support in surveys is the best we can do.

In Pakistan, the Program on International Policy Attitudes (PIPA) fielded four surveys between 2007 and 2009, questioning respondents in depth on a range of issues related to militancy and terrorist groups. In February 2007 and September 2008, questionnaires were fielded in both rural and urban areas in collaboration with START (the National Consortium for the Study of Terrorism and Responses to Terrorism) to 1243 and 1200 respondents, respectively. In September 2007, a survey was conducted in collaboration with USIP (the United States Institute of Peace) in urban areas, interviewing 907 respondents.

While these three polls ask very important questions, they suffer from a high percentage (20-30%) of “don’t know/no response” answers to many of the delicate questions. Basic cross-tabulations show that respondents of various demographics (women, the less educated) systematically choose the abstention response more often than other respondents, meaning that any analysis that correlates demographics with opinions will be biased, especially if we also assume that abstaining respondents would have chosen to respond in a particular way, differently from those who did respond. Using the September 2007 data, Shapiro and Fair (2010) showed that poverty, education and religiosity do not explain support for militant groups.

The PIPA May 2009 survey is a particularly good source of data, because it is nationally representative and has a very low abstention rate (“don’t know/no response”

answers) to delicate questions (less than 10% for most questions). The low abstention rates were achieved by working with an expert survey organization in Pakistan, which rigorously pre-tested the survey instrument with respondents. In addition, the translation of the questionnaire into Urdu was based on learning from past experiences with similar survey questions; for example, respondents did not necessarily readily understand what al-Qaeda referred to (*qaeda* means book or guide in Urdu), but the phrase Bin Laden *ki tanzeem* (Bin Laden's organization) was easily understood, and therefore used in the 2009 survey.

This paper is the first to study the PIPA 2009 survey data at the individual respondent level to identify the determinants of support for terrorist groups and militancy. The analytical work using the data to date shows provincial variation in views and an aggregate shift against militants relative to the 2007 poll (Fair 2009a, 2009b). Support for militancy and terrorism is quantified using three questions which include asking respondents to state their views of a Taliban takeover of Pakistan, and to describe their general feelings toward bin Laden and al-Qaeda. In addition, views of the United States are measured using two additional questions which ask respondents about views of the current United States government and support for al-Qaeda attacks on the U.S.

Recall that the existing literature finds that education does not explain support for terrorism. However, this literature fails to examine and separate out the relationship between views on terrorism and different types of schooling (for example, public versus private), education for different sub-groups (for example, girls versus boys), or non-monotonic effects of higher levels of education. An insignificant aggregate effect of years of education may be masking significant variations for different sub-groups.

In particular, views of militancy may vary by gender in Pakistan. The actions of militant groups affect men and women differently. The policies of the Pakistan Taliban are much more harmful for women in the areas where it holds sway, in the FATA and the Khyber Pakhtunkhwa province in Pakistan (as were those of the Afghan Taliban in Afghanistan). The Taliban bans women from working and burns down girls' schools. Women and men have different opinions on related national security issues in other contexts as well. In the United States, women are shown to be more concerned about terrorism (Gallup 2011) relative to men, and to be less supportive of defense spending than men (Eichenberg and Stoll 2012).

The relationship between education, gender, and views on militancy remains, until this paper, unexamined. The policies of the Taliban and militant groups in Pakistan adversely affect educated women in particular, since they are the ones more likely to be working or educating their daughters. In contrast, the policies are less likely to affect men of different education levels differently. In addition, public education (currently accounting for 70% of education provision) is segregated by gender in Pakistan. The central contribution of this paper is to establish that the relationship between education and support for terrorism varies by gender.

Existing research on the determinants of views of militancy also fails to take into account the respondents' reaction to local terrorist events and fatalities (other than concurrent work by Blair, Fair, Malhotra, and Shapiro (2012), which uses different datasets for both support for militancy and terrorist events). I account for terrorist events in each respondent's district in 2008 (the year before the PIPA 2009 survey) using data from the Global Terrorism Database.

In ordered probit regressions, I relate each of the five outcome measures of views on militancy and of the United States, detailed below, to respondents' gender, age, education, and income, controlling for local population and provincial differences. The results confirm the findings of the existing literature, and education overall appears unrelated to support for terrorism and views of the U.S. I then account for gender differences in the relationship between education and public opinion on terrorism. I find that as women become more educated, they are less likely to support militancy and terrorism relative to similarly educated men, whereas uneducated women are more likely to support militancy and terrorism relative to uneducated men, controlling for personal religiosity, demographics and region, and accounting for terrorist events in the district using data from the Global Terrorism Database. The effect of women's education is driven by the secondary years of schooling, and the first couple of years of college. The gender-education result reverses when it comes to views of the United States, so that educated women have more negative views of the U.S. relative to educated men. This is likely due to increased awareness of violations of Pakistan's sovereignty due to, among other events, U.S. drone strikes. I also examine the perception of threats to Pakistan posed by militant groups. While demographics are only weakly related to

threat perceptions, local terrorist events directly increase the perception of the threat posed by specific militant groups.

I then attempt to disentangle whether the observed results reflect a causal effect of education or an underlying correlation. The literature to date establishes associations and does not tackle the difficult issue of causation, which is required to make policy prescriptions. I break ground by laying out the theoretical case for both correlation and causation, and then employ a well-established technique from the economics literature (Altonji Elder Taber 2005) to show that a causal story is in fact plausible. Nevertheless, more in-depth research is needed to firmly establish the real differences between boys' and girls' schooling, and their effects on support for terrorism, in Pakistan.

The next section contains a detailed description of the data used in the paper, along with some descriptive statistics and basic cross-tabulation graphs. The regression analysis, which establishes the main results of the paper, follows in Section 3. In Section 4, I run some robustness checks. Section 5 lays out the case for correlation and causation, and describes the Altonji Elder Taber (2005) method for assessing the validity of a causal interpretation of the results. Section 6 concludes.

2. Data and Descriptive Statistics

2.1 Data

This paper uses individual respondent level data from the May 2009 survey conducted by the Program on International Policy Attitudes. The survey was carried out by SEDCO (Socio-Economic Development Consultants, Islamabad, Pakistan), with the questionnaire developed by PIPA. All interviewing was conducted in Urdu, with 1,000 face-to-face interviews conducted across 64 primary sampling units in rural areas and 36 in urban areas; ten respondents were surveyed in each sampling unit (PIPA reports that the sampling error for a sample of this size is approximately ± 3.2 percentage points). Interviews were conducted between May 17 and 28, 2009. Baluchistan was oversampled, therefore sampling weights are utilized in the analysis.

The terrorist events data is from the Global Terrorism Database (the GTD), which compiles information on terrorist incidents world-wide from 1970 to 2010 using newspaper reports. For each GTD incident, information is available on the date and location of the

incident, weapons used and the nature of the target, number of casualties, and (when identifiable) the group or individual responsible. To match the locality level GTD data to the individual level PIPA data, I aggregated the GTD incidents from the locality to the district level, corresponding to each of the districts represented in the PIPA survey. In particular, I use data on the total number of people who were wounded and who died in terrorist attacks in each district in 2008.

For incidents to be included in the GTD, the following criteria must be fulfilled: 1) the incident must be intentional; 2) the incident must entail some level of violence or threat of violence; and 3) the perpetrators of the incidents must be sub-national actors. In addition, at least 2 of the following 3 criteria must be met: 1) the act must be aimed at attaining a political, economic, religious, or social goal; 2) there must be evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims; and 3) the action must be outside the context of legitimate warfare activities.

2.2 Descriptive Statistics

2.2.1 Support for Militancy

Tables 1A through 1C contain tabulations of the responses for each of the measures I use to quantify support for militant groups. The first question (Table 1A) asks the respondent whether the Pakistan Taliban taking control over Pakistan would be a very good, good, bad, or very bad thing. I interpret ‘very good’ as high support for the Pakistan Taliban, ‘very bad’ as lack of support, and the movement from very good to very bad as declining support for the group. 67% of respondents think the Pakistan Taliban taking control of the country would be a very bad thing^{vi}.

The Pakistan Taliban operates mainly within Pakistan, mostly harming Pakistanis. Therefore this question should accurately reflect ‘raw’ views of militant violence and support for terror groups, without being conflated with negative views of other terrorist targets, such as the United States. Most analyses of polls in other contexts look only at views of terrorist acts affecting other populations - consider, as an example, questions which ask Palestinians about terrorist attacks in Israel - and therefore miss this important aspect of views of militancy.

It is important to note that this survey was undertaken at a time, in May 2009, and in a context where there was a great deal of militant violence targeting Pakistani civilians in many parts of Pakistan, much of it perpetrated by the Pakistani Taliban. Consider the September 2008 bombing of the Marriott Hotel in Islamabad, which killed at least 54 and wounded at least 266 people, the majority Pakistani civilians. Immediately preceding the survey, the Swat conflict between the Pakistan Taliban and the military was taking place, killing scores and displacing thousands. This analysis should be viewed in that context.

Table 1B shows the responses to the questions measuring feelings toward bin Laden and al-Qaeda, respectively. Responses range from very positive to very negative, and I interpret ‘very positive’ as high support for the group or its leader, ‘very negative’ as lack of support, and moving from very positive to very negative as declining support. A more sizable group (about 12%) abstains from answering this question, relative to the other questions in the May 2009 poll. What is most notable about the responses is the relatively equal spread in each category, other than ‘very positive’.

Table 1C presents two questions which measure respondents’ views of the United States and views of terrorism against the U.S. The first question asks about feelings toward the current U.S. government. 58% of respondents viewed the current U.S. administration unfavorably in May 2009. The second question asks respondents to choose whether they: 1) support al-Qaeda attacks against the United States and share al-Qaeda’s values, 2) oppose al-Qaeda attacks against the U.S. but share al-Qaeda’s values, or 3) oppose both. I interpret support/share as high support for terrorism against the U.S., oppose both as lack of support toward terrorism against the U.S., and movement from support/share to oppose/oppose as declining support for terrorism against the U.S. Because these responses are two-dimensional, I also treat each of the responses separately as dummy variables in my econometric analysis. It is disconcerting that an almost equal number of respondents identify themselves in each of the categories (with a 13% DK/NR rate); in particular, note that 25% of respondents say that they support al-Qaeda attacks against the U.S. and share al-Qaeda’s values.

The five PIPA questions identified above constitute the five main outcome variables in the regression analysis. Note that when I refer to support for terrorism in the remainder of the paper, I refer specifically to the three questions in Tables 1A and 1B; when I refer to

views of the U.S. and support for terrorism against the U.S., I refer to the two questions in Table 1C. Also, any individuals who do not respond to the questions I use are dropped from the subsequent analysis.

2.2.2 Perceptions of Threats

Table 1D tabulates the responses to the questions on threats faced by Pakistan. In three separate questions, respondents are asked whether each of the following groups: 1) Islamic militants and local Taliban in FATA, 2) al-Qaeda, and 3) religious militant groups in general, is a critical threat faced by Pakistan in the next 10 years, an important but not critical threat, or not a threat. Notably, 80% of respondents think Islamic militants and local Taliban are a critical threat to Pakistan, 82% think the same for al-Qaeda, and 67% for religious militants. The number is lowest for religious militants in general, implying that a general grouping is considered a lesser threat than specific groups, which makes sense. While these questions are not directly interpretable as support for militant groups or lack thereof, I will specifically test whether the perceptions of militant group threats change based on local terrorist events.

2.2.3 Education, Age, and Income

I present three sets of descriptive statistics on education, describing the PIPA sample as well as the population in general. Table 2A shows the education levels for PIPA respondents and compares these to the population at large, using the 1998 census data. PIPA respondents are asked to select which of the following education categories best describes the level of education they have completed: Illiterate, Elementary school or less, Some Secondary, Secondary, Some College, and College^{vii}. 35% of PIPA respondents in 2009 had completed elementary school or less, while 50% had some secondary or a completed secondary degree. While PIPA respondents seem more educated relative to the population (from the Census), this is probably largely due to the different time periods: there was a well-documented increase in schooling in Pakistan in the time period between 1998 and 2009 (Andrabi et al 2007). Table 2B presents literacy ratios for men and women in the PIPA sample and in the Census, while Table 2C shows education levels for men and women in the

PIPA sample. Both tables reaffirm the fact that Pakistani women are less educated than men, and more women are at lower ends of the education level distribution than men.

At this point, it is worth briefly summarizing the educational landscape in Pakistan. Currently, about 70% of student enrollment is in schools run by the government and segregated by gender (both in terms of students as well as teachers) and 29% in mainly co-educational private schools (the majority of these are very low cost, rural, primary schools). Religious madrassas account for 1-3% of enrollment (Andrabi et al (2007, 2006), Lloyd, Mete, and Grant (2005, 2007)). There has been a rapid rise in primary private school enrollment as the numbers of these schools have multiplied since the mid-nineties.

Summary statistics for PIPA respondents' age and self-reported monthly household income in 2009 (both ordinal categorical variables since the respondents are asked to choose which category best represents them) are presented in Table 3A. About 70% of the respondents are between 16 and 39 years of age. This implies that most of the respondents were educated in the 1980s and 1990s, and some in the 2000s. Therefore, close to all the respondents are likely to have been educated in public schools, since the percentage enrolled in private schools was very small until the mid-1990s (and even now is primarily concentrated in primary schools). The PIPA survey does not ask respondents to identify whether they studied in a public or private school, but this is a useful question for future surveys. Table 3A also shows that almost 75% of respondents have a self-reported monthly household income ranging between Rs.3000 and Rs.15000, which in 2009 was equivalent to between \$35 and \$180.

Table 3B summarizes personal religiosity, which shows little variability: 48.5% percent of respondents identify themselves as very religious, while 40.1% identify themselves as somewhat religious.

Finally, summary statistics for local population (specifically, the population of the primary sampling unit) and the total number of people who were wounded and killed in terrorist attacks in PIPA districts are presented in Table 3C.

2.2.4 Cross-tabulations

Figure 1 is a set of five graphs which display the cross-tabulation of each of the main outcome variables with education levels. The outcome variables are recoded as binary to be

interpreted directly as support for militancy, and I graph (the bivariate relationship of) each variable against education levels, increasing from left to right on the bar graph. If there were a negative relationship between education and support for terrorism, the bars would decline as education increases from illiterate to college (left to right). However, the graphs do not reflect such a relationship. For most of the variables, the relationship is non-monotonic, with one exception (which runs against expectations): more educated respondents are more likely to support al-Qaeda attacks against the U.S.

3. Regressions

3.1 Empirical Strategy

The main specification used in this paper is as follows:

$$Y_i = a + bFemale_i + cEduc_i + dAge_i + fIncome_i + g(FemaleXEduc)_i + hReligious_i + jLocalPop_l + kDistrictTerrorism_d + lProvinceDummies + e_i,$$

where a separate regression is run for each of the five outcome variables identified above, Y_i .

The issue with using cross-sectional data is that omitted variables such as intelligence and family background could drive both education and public opinion. This means that we cannot easily interpret the results as the causal effect of education on views of militancy. Girls who get more schooling could belong to more progressive families compared to boys who get more education; belonging to such a family could also account for less support of terrorism. Intelligence could also be more of a factor in girls getting educated relative to boys (parents may educate all their sons but only their most intelligent daughters); intelligence could in turn drive opinions on terrorism. What kind of data can best be used to establish causality in this context? If we had individual level panel data, fixed effects would be able to correct or account for both intelligence and family background, but education is unlikely to vary for the same adult over time (children are not surveyed in public opinion polls), making its effect of education impossible to identify. To properly account for family background, we could use household level data where we could examine differences in the education of individuals within the household (one way to control for individual intelligence would be to ask parents about their perceptions of their children's intelligence and ability).

A concern with household data is that while education decisions for girls are made in their parental household, at the time of a household survey these women are usually living in

their marital household, and the family background captured may be different from that of the parental household. However, one can account for this by asking questions about the parental household, and also questioning unmarried girls living with their parents. This is a useful survey strategy to consider for future research.

In Sections 4 and 5, I run a number of robustness checks on the empirical work and lay out the case for both correlation and causation, and use the Altonji Elder Taber (2005) method to argue that a causal story seems plausible in this context.

3.2 Baseline Regression

Table 4 presents the baseline regression results relating support for terrorism and views of the United States to gender, age, education, and income, controlling for local population and province dummies, without the gender-education interaction term. Each column represents a separate ordered probit regression corresponding to the five outcome variables identified in Tables 1A to 1C. Higher values of the outcome variables in columns (1) to (3) correspond to higher support for militant groups, and lower values correspond to lower support for militant groups. Higher values of the feelings toward the United States variable (column 4) correspond to more unfavorable views of the U.S. Higher values of the support Al-Qaeda attacks against the U.S./share al-Qaeda values variable (column 5) correspond to higher support for terrorism against the U.S.

Table 4 shows that women overall seem to be more likely to have positive views about terrorist groups relative to men. This result is strongly significant for the Pakistan Taliban outcome, as well as for feelings toward bin Laden and al-Qaeda. Women seem to have better views of the U.S. and are less likely to support al-Qaeda attacks against the U.S. (though not significantly). Older people seem to have lower support for terrorist groups. Income is not significantly correlated with support for terrorism, though the signs imply a negative relationship. Education is also not significantly correlated with support for terrorism, and the results seem mixed in terms of signs. The results in Table 4 largely confirm what the existing literature finds, and it is notable that education overall does not appear correlated with opinions on terrorism.

3.3 Support for Terrorism, Education, and Gender

Table 5 adds the female-education interaction to the baseline regression, along with personal religiosity, and terrorist events in the district. Note that the coefficients are not marginal effects and therefore I will discuss only the sign and the significance, and will discuss magnitudes after presenting the marginal effects regressions in Table 7. The bottom line from the results is that as women become more educated, they show lower support for militant and terrorist groups relative to similarly educated men, while uneducated women show higher support for militancy and terrorism relative to uneducated men. However, views of the United States become more negative, and support for terror attacks against the U.S. increases, for more educated women relative to similarly educated men.

Note that, in this interaction specification, the coefficient on the independent variable ‘female’ is to be interpreted as the difference between uneducated (or illiterate) women and illiterate men. The coefficient on the female-education interaction term reflects on women as their education increases relative to similarly educated men. Column (1) shows that uneducated women are likely to think that the Taliban taking over control of Pakistan would be a better thing relative to uneducated men, but the education of women reverses this relationship.

Columns (2) and (3) show that more educated women (relative to similarly educated men) tend to have more negative feelings for both bin Laden and al-Qaeda, whereas uneducated women are more likely to have positive feelings toward both the individual and the group, relative to uneducated men^{viii}. Columns (4) and (5) show that more educated women (relative to similarly educated men) tend to have more negative views of the U.S. and are more supportive toward al-Qaeda attacks on it, whereas uneducated women have more positive feelings of the U.S. relative to uneducated men. In addition, I analyzed the three response options for the support for terror attacks against the U.S. variable as dummy outcome variables. The separate regressions show that the effect in column (5) stems from the support al-Qaeda attacks against the U.S./share al-Qaeda values response, rather than the other two responses to the question (oppose attacks/share values or oppose both). That is, more educated women are strongly more likely to choose the support/share response relative to similarly educated men, while uneducated women are less likely to choose that response

relative to uneducated men. I will discuss possible explanations for these results in Section 3.7.

It is clear that not considering education for men and women separately conceals an important relationship between education and opinions on militancy^{ix}. In fact, the baseline results in Table 4 without the interaction term do show that women are more supportive of terrorism; in light of the results in Table 5, this is explained by the fact that women on average are less educated than men.

Personal religiosity, which is added as a control variable in this regression, is coded as a binary variable. The variable *religious* is set to one if the respondent says he is very religious, and set to zero if the respondent chooses one of somewhat, not very, or not at all religious as a response (see Table 3B). The results in Table 5 show that higher religiosity is highly positively correlated with positive views of al-Qaeda and Osama bin Laden, and with negative opinions of the U.S. This is in contrast to the current literature which argues that religiosity is uncorrelated with support for militancy (Shapiro and Fair 2010). Note that income is mostly uncorrelated with support for terrorism, although those with higher incomes are marginally (at the 10% significance level) more likely to support al-Qaeda attacks against the U.S.

Finally, the number of people wounded in terror attacks in the district in the year prior to the survey is accounted for using data from the Global Terror Database. Local terror attacks appear uncorrelated with individuals' support for terrorism or views of the U.S. The results are very similar if the number killed in terror attacks is used instead of the number wounded (results not shown in Table 5).

3.4 Gender and Education Levels

Since the respondents' education is measured as an ordinal categorical variable, I separate out the education levels and identify which levels in particular underlie the female-education effect identified above. In Table 6, I separate out the education term into separate dummy variables, leading to five female-education level interaction terms, for each of the different levels of education (with illiterate as the reference category): elementary or less, some secondary, secondary, some college, and college. The regression run is the same as in Table 5, with age, income, personal religiosity, local population, district terrorism, and

province dummies also accounted for, but age, income, and education are treated as categorical variables in this regression. The results show that the differences between the opinions of educated women and men are driven primarily by some high school, high school, and some college education years; that is, women with these levels of education become less supportive toward terrorist groups (but more supportive of al-Qaeda attacks on the U.S.) relative to men with these levels of education. This provides an important insight into where the effects emerge, and narrows down the focus for future research on the topic.

3.5 Marginal Effects

Tables 7A through 7E present marginal effects coefficients for each of the five ordered probit regressions from Table 5. Each regression (for each outcome variable) is represented in a separate table, with the columns containing each of the response options for that question. I report the marginal effects on female, education, and the female-education interaction term. The marginal effect on the female-education interaction term can be interpreted as the increase in the likelihood of women relative to men identifying a particular response as they (both genders) move up one education level (say, from elementary to some secondary, some secondary to secondary). In addition, the coefficient on female can be interpreted as the increase in the likelihood of uneducated or illiterate women relative to men identifying a particular response.

To illustrate, I interpret the magnitudes for Table 7C, the feelings toward al-Qaeda response (the results are similar for the other outcome variables). Relative to uneducated men, uneducated women are 14% more likely to have a very positive view of al-Qaeda, 22% more likely to have a somewhat positive view of al-Qaeda, and 8% more likely to have a mixed view of al-Qaeda. They are 9% less likely to have a somewhat negative view of al-Qaeda, and 35% less likely to have a very negative view of al-Qaeda. With an increase in education (of one level), women, relative to men, are 3% less likely to have a very positive view of al-Qaeda, 5% less likely to have a somewhat positive view of al-Qaeda, 2% less likely to have a mixed view of al-Qaeda, 2% more likely to have a somewhat negative view of al-Qaeda, and 7% more likely to have a very negative view of al-Qaeda.

The numbers in the other tables can be interpreted similarly. The tables all show that as women become more educated, relative to similarly educated men, they are less likely to

choose responses supporting militant groups and more likely to respond with lack of support for militancy. Uneducated women, on the other hand, are more likely to respond supporting terror groups and less likely to show a lack of support for terrorism relative to uneducated men. However, these relationships reverse when it comes to views of the U.S: educated women are more likely to have unfavorable opinions of the U.S. and to support al-Qaeda attacks against the U.S. relative to similarly educated men, whereas uneducated women have more favorable opinions of the U.S. and are less likely to support al-Qaeda attacks against the U.S. relative to uneducated men.

3.6 Predicted Value Graphs

Figure 2 is a set of five graphs which display the regression results visually. I recode the outcome variables as binary, to be interpreted directly as support for terrorism, and then re-run the ordered probit regressions (exactly as in Table 5). The predicted values for each outcome variable are calculated for each category of education and gender using the fitted regressions, and their average is displayed in the graphs.

The graphs confirm the main result visually: as women become more educated, their support for terrorism declines. For men, education moves their support upward. In addition, as women become more educated, their views of the United States become less favorable and their support for terrorism against the United States increases. As men become more educated, their views of the U.S. become more favorable, but their support for terrorism against the U.S. does not change much.

These graphs suggest that the relationship of female education with support for terrorism and opinions on the U.S. is more than just relative to men: in many instances, it is an absolute relationship, with women's education associated with reduced support for terrorism and unfavorable opinions of the U.S., and men's education associated with higher support for terrorism and favorable opinions of the U.S.

3.7 Explaining Views of the United States

At first glance, the results on the views of the United States and attitudes towards al-Qaeda attacks on the United States constitute a puzzle, relative to the other results on views of militancy in general and of terrorism directed at Pakistanis by the Pakistan Taliban. A

large literature examines the factors underlying anti-Americanism in the Muslim world, and can be divided up broadly into two camps, one which argues that anti-Americanism emerges as a response to what America does (its foreign policy), and the other to what America is (American culture). Kull (2011) summarizes polling data and focus group interviews from a set of Muslim countries, including Pakistan, to support the former case. The argument is that Muslim anger at America stems from the perception that the United States wields coercive force on the Muslim world, undermining democracy in these countries and compromising their sovereignty, in order to further its own political and economic interests. Given that the United States otherwise strongly espouses democratic principles, this perception leads to feelings of betrayal and negative views of the U.S. In fact, Kull suggests that in Muslim countries, negative feelings against the United States tend to be stronger than negative feelings against terrorist groups. This implies that terrorist groups such as al-Qaeda tend to garner more sympathy than the United States when asked about in conjunction with the U.S.

To better understand the views of those who support al-Qaeda attacks against the United States and share al-Qaeda's values, I correlated this dummy variable with a number of related questions from the PIPA survey. The correlations show that the respondents who support al-Qaeda attacks against the U.S. and share al-Qaeda's values are more likely to have 'very unfavorable' opinions of the U.S., but do not have better opinions of al-Qaeda in general, relative to those who do not support attacks against the U.S. and share al-Qaeda's values. This confirms the notion outlined above that negative feelings toward the United States are stronger than views of al-Qaeda, and these negative feelings lead to support for al-Qaeda attacks against the U.S.

While those who support attacks against the U.S. are equally likely to say the U.S. abuses its power in relations with the Pakistani government (these numbers are very high, about 90%, both for those who support attacks against the U.S. and those who do not), they are more likely to think the United States purposely humiliates the Muslim world (as opposed to the other responses, which are treating it with respect or disrespecting it out of insensitivity and ignorance). They are also more likely to say that drone attacks in Pakistan are unjustified, and more likely to think that hypothetical U.S. bombings in Pakistan to take out al-Qaeda training camps or Taliban bases would not be justified, relative to those who do not support attacks against the U.S. However, they are equally likely to disapprove of the NATO

mission in Afghanistan or the Obama decision to increase U.S. troops in Afghanistan, suggesting that the Afghanistan war does not feature into Pakistani support for terror attacks against the U.S.

Following on this, negative views of the United States can be explained by the following logic. More educated women might become more aware of perceived or actual violations of Pakistani sovereignty, such as drone attacks targeting militants near the Pakistan-Afghanistan border (which also result in civilian casualties). They may feel strongly against such violations, and may highly value Pakistani autonomy and freedom. Is it education or factors correlated with education which drive these differences in opinions of the U.S.? I will return to this following a discussion of correlated factors and causal channels in Sections 5.1 and 5.2.

3.8 Perception of Threats: Relation with Terrorism

In Table 8, I regress the perception of threats posed by various militant groups to Pakistan on the explanatory variables of interest: gender, education, income, religiosity, age, community population and district terror attacks. While a lower perception of militant threats to Pakistan is not directly interpretable as support for terrorism, I am particularly interested in seeing if perceptions change after local terror attacks. Recall from Table 1D that the questions specifically ask about the threats posed by Islamic militants and local Taliban, by al-Qaeda, and by religious militant groups as a whole. While the perceptions of threats posed by these groups are at best weakly related with demographics (the female-education results are marginally insignificant), there is a significant relationship with local terrorism. In particular, terrorist incidents in the district increase the perception of threats posed by the Taliban as well as al-Qaeda. This shows that individuals have a rational response to local terrorist events, which is to increase their perception of the threat posed by these specific groups, but not by religious militant groups in general. This implies that there is a role for information campaigns to inform the public about local and regional terrorist attacks and the identity of the suspected perpetrators.

4 Robustness

4.1 Social Desirability Bias

Social desirability bias, which occurs when individuals choose socially desirable responses to survey questions, is of particular concern with survey data on sensitive questions. Men and women, as well as people of different education levels, have been shown to vary in their desire to choose socially appropriate responses, even if their underlying views may actually be similar. Failing to account for social desirability bias can lead analysts to the mistaken conclusion that men and women or people with varying education levels have different views. However, this bias cannot explain the results in this paper, which show different responses not just for men and women or for people with different education levels, but for educated women relative to educated men and uneducated women relative to uneducated men.

4.2 Female X Something Else?

Could another observable factor, correlated with women's education, be driving the female education results? Age, income, and community population are three possible factors. Specifically, could the results be driven by differences between younger women and men, rather than educated women and men? Could they be driven by the differences between richer women and men rather than educated women and men? Finally, could they be driven by the differences between urban women and men? To check that this is not the case, I used two informal tests. First, I replaced the female-education interaction term with an interaction of female with each of the three variables identified above: age, income, and local population. The results are insignificant for the female-age interaction term for all of the support for terrorism and views of the U.S. outcome variables. The female-population interaction term is significant for two outcome variables out of five: support for al-Qaeda attacks against the U.S. and views of al-Qaeda. The female-income interaction term is significant for one outcome variable out of five: support for al-Qaeda attacks against the U.S. Given these results (available on request), community population or income alone cannot explain our entire set of female education results.

Second, I added the female-new variable interaction term to the specification in Table 5, with the female-education interaction. The female-education effect remains strong and significant, while the female-new variable effect is insignificant for age and income for all five outcome variables. The female-population term is significantly related to support for al-Qaeda attacks against the U.S. and the views of al-Qaeda, but the female-education term remains significantly related to these variables as well. Taken together, these results show that the female-education effect is not driven by age, income, or community population.

In Section 5.3, I undertake a more formal test (following Altonji Elder Taber 2005) which uses correlation with all the observables to assess whether correlation with unobserved factors could explain the results.

5 Explaining the Empirical Results

We have established empirically that there is a strong gender dimension to the relationship between education and opinions on terrorism. There are two competing hypotheses which could explain these results. The first is that girls who get educated are different in some way from boys who get educated, and the factors which drive the difference in education also explain lower support for terrorism. This implies that what we have observed is a correlation, and to tackle support for terrorism one must target these omitted factors. The second is that the (content or quality of) education of boys and girls is different in some way, and this drives the differences in support for terrorism. This is a causal story, and implies that we must target and aim to increase the education of girls, at least getting as many as possible to a high school degree and a few years beyond. In addition, we must aim to understand what works for girls' education and make the requisite changes in boys' education.

The next two sections discuss the case for correlation and causation respectively, and in section 5.3 I use the Altonji Elder Taber (2005) selection on unobservables method to disentangle whether correlation or causation is more likely to be behind the results. In doing this, I break ground: the literature examining the determinants of support for terrorism to date only establishes associations, and does not disentangle correlation and causation as I do here.

5.1 The Case for Correlation

The first hypothesis is that the difference between educated girls and boys is driven by an omitted variable (or variables), such as belonging to different types of families. Across the literature, the main variable that emerges as a differentiating factor affecting the enrollment of girls, and not of boys, in Pakistan is mothers' education (Lloyd, Mete, and Grant (2005, 2007), Andrabi et al (2007))^x. It is plausible that differences in the opinions of educated women (relative to men) could be driven by the influence of their educated mothers and their views, rather than learning from their own schooling. Similarly, differences in the opinions of uneducated women (relative to men) could be driven by the influence of their uneducated mothers. However, having mothers' education as an omitted variable implies that we must target our original variable of interest, the education of girls, but means that it may perhaps take up to a generation for the full effects to manifest themselves.

As argued earlier, belonging to a progressive or liberal family might be the relevant omitted variable, since such families may be more likely to educate their daughters and also have lower tolerance or support for militant groups (conversely, conservative families may be less likely to educate their daughters and also have higher tolerance or support for terrorism). This factor may matter less for the education of boys, which would then explain the female-education results, since these results are for (educated or uneducated) women relative to (educated or uneducated) men. What creates a 'liberal' household? If female education is one important factor (as seems plausible) in making families more progressive, it is still an important variable on which to focus. Note that we have accounted for religiosity, which may be correlated with liberalism.

The above are household level factors that may influence the education of girls more than that of boys and may help explain support for terrorism. Next, I will discuss individual level factors that may differentiate educated women from men. Two such factors could be intelligence and hard work. These two variables may be much more influential for whether or not a girl gets educated than whether a boy gets educated (there is some evidence that parents educate their most intelligent daughters in the Pakistani context, but this factor matters less for boys, who are more likely to get educated anyway (Andrabi et al 2007)). Intelligence and hard work could in turn drive more progressive opinions on terrorism by encouraging questioning of terrorist group rhetoric, motives, and methods. There is in fact evidence that

enrolled girls spend more time studying at home than boys, who play more (Andrabi et al 2007; this is true in countries other than Pakistan as well), so hard work may be a factor in explaining the results. Because the above builds on the fact that there is a selection on motivation and intelligence in the education of girls that is more acute than in the education of boys, the fact that uneducated women, relative to uneducated men, are more likely to support terrorist groups, can also be explained by this.

A third set of omitted factors may be personal interactions and non-educational information sources, which may be different for men and women, and also correlated with their education. These personal interactions and sources of information may help shape the opinions of uneducated men and women, as well as educated men and women. In Pakistan, educated and uneducated boys and men get their information from informal gatherings with other men in the town or the village, which focus on hearsay and rhetoric. Terrorist groups may preach to and directly recruit men in these locations as well. Women are limited much more to indoor spaces in many parts of the country (and are not preached to by militant groups), and talk less about politics with other women. The information source for educated women is thus likely not other women, but could be what they learnt in school, books and newspapers (and perhaps television), which may help them make informed decisions relative to educated men, who focus more on their informal interactions to form opinions. However, using this explanation, it is less clear why the opinions of uneducated women, which may be based on hearsay from men, are more supportive of terrorism than those of uneducated men.

The differences in opinions on the U.S. and support for attacks against the U.S. can also be explained by any of the factors highlighted above: omitted variables such as intelligence or belonging to a liberal or progressive household, or personal interactions or sources of information such as the media could make educated women more aware of violations of Pakistan's sovereignty and drive opinions against the United States.

5.2 The Case for Causation

The second hypothesis is that the education of boys and girls itself is different in some way. Such differences are likely to stem from differences between girls' public schools and boys' public schools, such as variations in how male and female teachers teach. I focus here on public schools, since they form a majority of the education landscape (and did more

so at the time the PIPA sample was educated) and also because they are segregated in terms of gender. In addition, the recent expansion of private schools is still an elementary education phenomenon, and the years around high school (where the female-education results stem from) are still largely concentrated in the public schooling system^{xi}.

There is some evidence that women are better teachers, in that their students perform better on standardized assessments (in a survey done by the Social Action Program, cited in Andrabi et al 2007; the standardized assessments test language and math, not opinions, of course). This is despite some evidence that (female) teachers in girls' schools have fewer years of teaching experience and are more likely to be absent than (male) teachers in boys' schools (Lloyd, Mete, and Grant 2005). In addition, the exact content taught by male and female teachers could differ, although the curriculum is the same by law, and the textbooks are the same as well^{xii}. Understanding whether and how male and female teachers impart lessons and knowledge differently to their respective students is an important avenue for future research. Given my empirical results, we can choose to focus on secondary school and a few years beyond. Understanding what works in girls' schooling and what does not in boys' schooling will not only help direct the focus on girls' schooling, but also help inform how to reform boys' schooling and male teaching to improve opinions on terrorism.

It is important to note here again, as I did in the introduction, that the policies of the Taliban and militant groups in Pakistan adversely affect educated women in particular. 80% of Pakistanis in this survey respond that the Pakistan Taliban does not allow girls to go to school and women to go to work, and 65% respond that they do not allow children to be vaccinated in the areas in which the Pakistan Taliban wields control. Given this, one could think that the education of women is not different per se, but that more educated women are more affected by and hence more likely to oppose the Taliban's policies. However, note that the effects I find are very strong for the questions which look at terrorism outside Pakistan (al-Qaeda and attacks against the U.S.); since al-Qaeda is less likely to affect the lives of educated Pakistani women differently than men, the 'policies' explanation does not suffice to explain the entire set of results.

Again, the differences in opinions on the U.S. and support for attacks against the U.S. can be explained by differences in girls' and boys' schooling and teaching by male and female teachers, if girls' schools and teachers focus more on Pakistan's sovereignty.

5.3 Correlation or Causation? Using Selection on Observables as a Guide to the Selection on Unobservables

Using a well-established approach from the economics literature, developed and formalized by Altonji, Elder, and Taber (2005), this section will attempt to quantitatively assess whether the results in this paper are more likely to reflect correlation or causation. The basic logic is as follows: the main variable of interest, which is likely to be endogenous, is correlated with the observed control variables, and also with some unobserved variables. In our case, the female-education interaction (as well as the variable female, which represents uneducated women) is possibly correlated with some unobservables as outlined in Section 5.1. We can calculate the exact influence of observed control variables on female education. Then, assuming that the observed variables are a random subset of a larger set of observed and unobserved variables, we can use that number to calculate how much larger the influence of omitted variables on female education needs to be (relative to the influence of the observed variables) to explain away the entire result. If this ratio is large, we can conclude that the selection on the unobserved variables must be much larger than the selection on the observed or control variables, which would be unlikely, and hence would support the causation story.

Following Bellows and Miguel (2009), I derive the unobserved selection to observed selection ratio below, extending it to the case with two variables: *Female*, representing uneducated women relative to men, and *Female x Educ*, representing educated women relative to men. Recall the main specification with controls:

$$Y_i = a + b_C Female_i + c_C Educ_i + d Age_i + f Income_i + g_C (Female \times Educ)_i + h Religious_i + j LocalPop_i + k DistrictTerrorism_d + l ProvinceDummies + U + e_i \quad (1)$$

with the coefficients now subscripted 'C' to denote that the specification includes controls. U denotes unobserved variables. Consider the following specification with the variables female and education, and their interaction, but without the other controls:

$$Y_i = a + b_{NC} Female_i + c_{NC} Educ_i + g_{NC} (Female \times Educ)_i + Q + e_i \quad (2)$$

where $Q = \delta X + U$, U denotes unobserved variables, and X denotes the observed control variables: age, income, religiosity, local population, district terrorism and province dummies.

The bias on the coefficient g in the specification without controls is:

$$plim g_{NC} = g_0 + \frac{Cov(FemalexEduc,Q)}{Var(FemalexEduc)} \quad (3)$$

where g_0 is the true relationship between female-education and the outcome Y .

The bias on the coefficient g in the specification with controls is:

$$plim g_C = g_0 + \frac{Cov(FemalexEduc,U)}{Var(FemalexEduc)} \quad (4)$$

Subtracting (2) from (1):

$$g_{NC} - g_C = \frac{Cov(FemalexEduc,\delta X)}{Var(FemalexEduc)}$$

If the true effect is driven to $g_0 = 0$:

$$\frac{g_C}{g_{NC}-g_C} = \frac{Cov(FemalexEduc,U)}{Cov(FemalexEduc,\delta X)} \quad (5)$$

Note that the RHS represents the relationship between the omitted variables and girls' education relative to the relationship between the observed control variables and girls' education. The LHS is calculated using the coefficients from the regressions (1) and (2) above. If this ratio is larger than one, 'selection' on unobservables needs to be greater than selection on observables to explain away the entire effect. Altonji, Elder, and Taber (2005) argue that the larger it is, the more plausible a causal story (they use a ratio of 3.55 to argue for causation).

Similarly:

$$plim b_{NC} = b_0 + \frac{Cov(FemalexUneduc, Q)}{Var(FemalexUneduc)}$$

where b_0 is the true relationship between uneducated females and Y .

$$plim b_C = b_0 + \frac{Cov(FemalexUneduc, U)}{Var(FemalexUneduc)}$$

$$b_{NC} - b_C = \frac{Cov(FemalexUneduc, \delta X)}{Var(FemalexUneduc)}$$

If $b_0 = 0$:

$$\frac{b_C}{b_{NC}-b_C} = \frac{Cov(FemalexUneduc,U)}{Cov(FemalexUneduc,\delta X)} \quad (6)$$

Note that the RHS of (6) represents the relationship between the omitted variables and uneducated women relative to the relationship between the observed control variables and uneducated women. For each of the five main outcome variables measuring support for militancy, the ratios defined in equations (5) and (6) are displayed in Table 9. The ratios are very large and suggest that a causal story is indeed plausible.

6 Conclusion

This paper uses a number of novel approaches to examine how education is related to support for terrorism and militancy in Pakistan. Various dimensions of support for militancy are examined, including views of a militant group that primarily affects Pakistani civilians, as well as groups which affect the United States. This paper establishes a critical empirical relationship: men and women think differently about militancy, and it is something plausibly in their education which affects their views. This effect particularly seems to emerge from the years spent in secondary school and beyond. In contrast to the current literature which puts education on the back burner when it comes to understanding support for terrorism, the empirical results established here put education, especially that of girls, back into the spotlight. A great deal of research has shown that educating girls is important for various household outcomes, including child and maternal health, and income. That it matters in reducing support for terrorism is new information. Given that the support of the family (and mothers) is important for new recruits as well as terrorists embarking on suicide missions, the gender dimension identified in this paper is especially important: educated women can prevent their sons and family members from joining terrorist groups and participating in attacks. Giving educated women more of a voice or a non-threatening platform where they can articulate and logically explain their views on militancy could be an important strategy in countering support for terrorism.

This paper is the first to study the determinants of support for terrorism together with views of the United States, and thus also yields important insights about how support for terrorism relates to anti-Americanism. As women become more educated, their views of the U.S. become more unfavorable and their support for terrorism against the U.S. increases, even as their support for overall militancy and terrorism, and that directed against Pakistan, declines. This important finding suggests that any broad educational de-radicalization efforts will not automatically help the United States in winning over Pakistani hearts and minds. To the contrary, as educated women achieve a better understanding of the problems of militancy and terrorism, they also develop stronger opinions against the United States' violations of Pakistan's sovereignty.

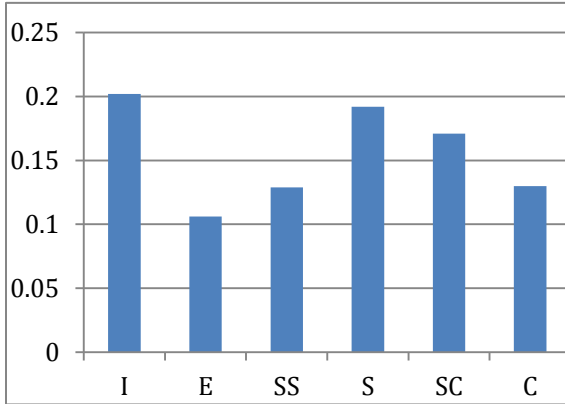
I deliberately do not recommend specific policy interventions in girls' and boys' education, because the data I use cannot offer direct insights into that. Further research is required to understand the exact mechanism underlying the empirical relationship I establish. This research must focus on several of the potential mechanisms highlighted in this paper: teaching by male and female teachers, especially in high schools; the selection of boys and girls into schooling, whether due to family or individual factors; and better understanding how girls and boys absorb information and interact with their peers and family members. In particular, we need to develop an understanding of what is working in girls' education in order to recommend changes in boys' education.

In future research, I plan to add questions onto a large scale household survey (which is a long-term panel, already in the field for its first iteration), to control for family and household level variables, supply side factors such as access to schooling, parental perceptions of their children's ability, etc. This will enable me to account for factors unobserved in this analysis. In addition, I plan to undertake a small-scale, in-depth qualitative survey in schools, asking male and female teachers (and their students) about views on militancy, sitting through lessons on history and politics, going through textbooks and lesson plans, and questioning male and female students about their sources of information, their personal interactions and their families.

These results also have important implications for other countries where education is segregated by gender: education in these contexts may result in varying opinions and perceptions by gender. Ultimately, this is an empirical approach which may help shed light on documented gender differences in multiple contexts.

Figure 1: Public Opinion by Education Level

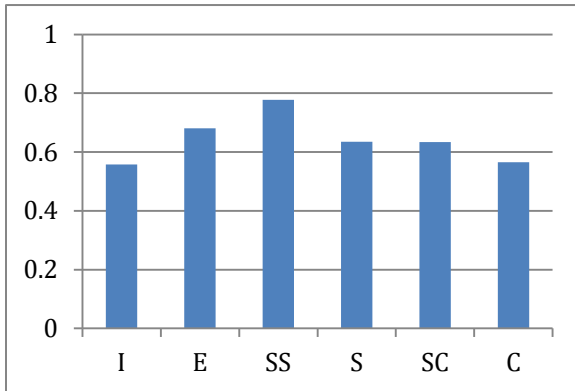
Pakistan Taliban control very good/somewhat good



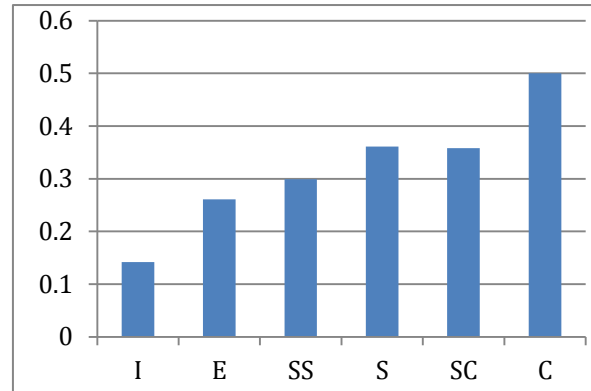
Legend

I=Illiterate
 E=Elementary or less
 SS=Some Secondary
 S=Secondary
 SC=Some College
 C=College

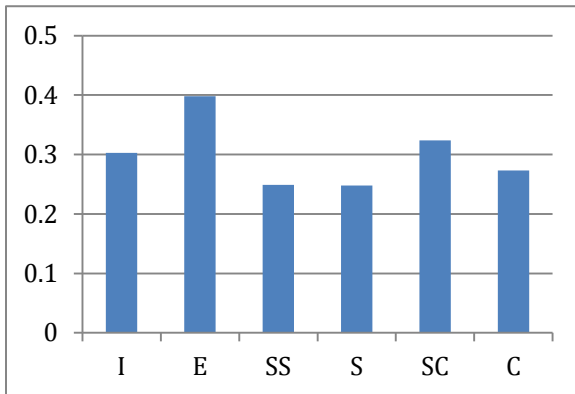
Views of U.S. somewhat/unfavorable



Support attacks against U.S. – share values



Feelings toward OBL very/somewhat favorable



Feelings toward al-Qaeda very/somewhat favorable

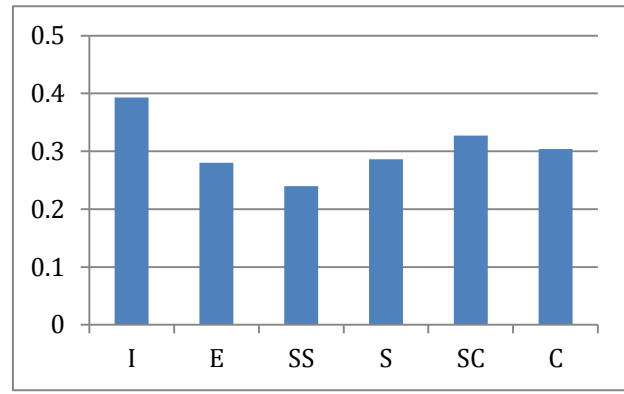


Figure 2: Predicted Value Graphs

Note: Average predicted values of each outcome in each gender and education category, using ordered probit regressions of the outcome on gender, education, genderXeducation, income, age, religiosity, local population, province dummies, and number wounded in terror attacks in the district.

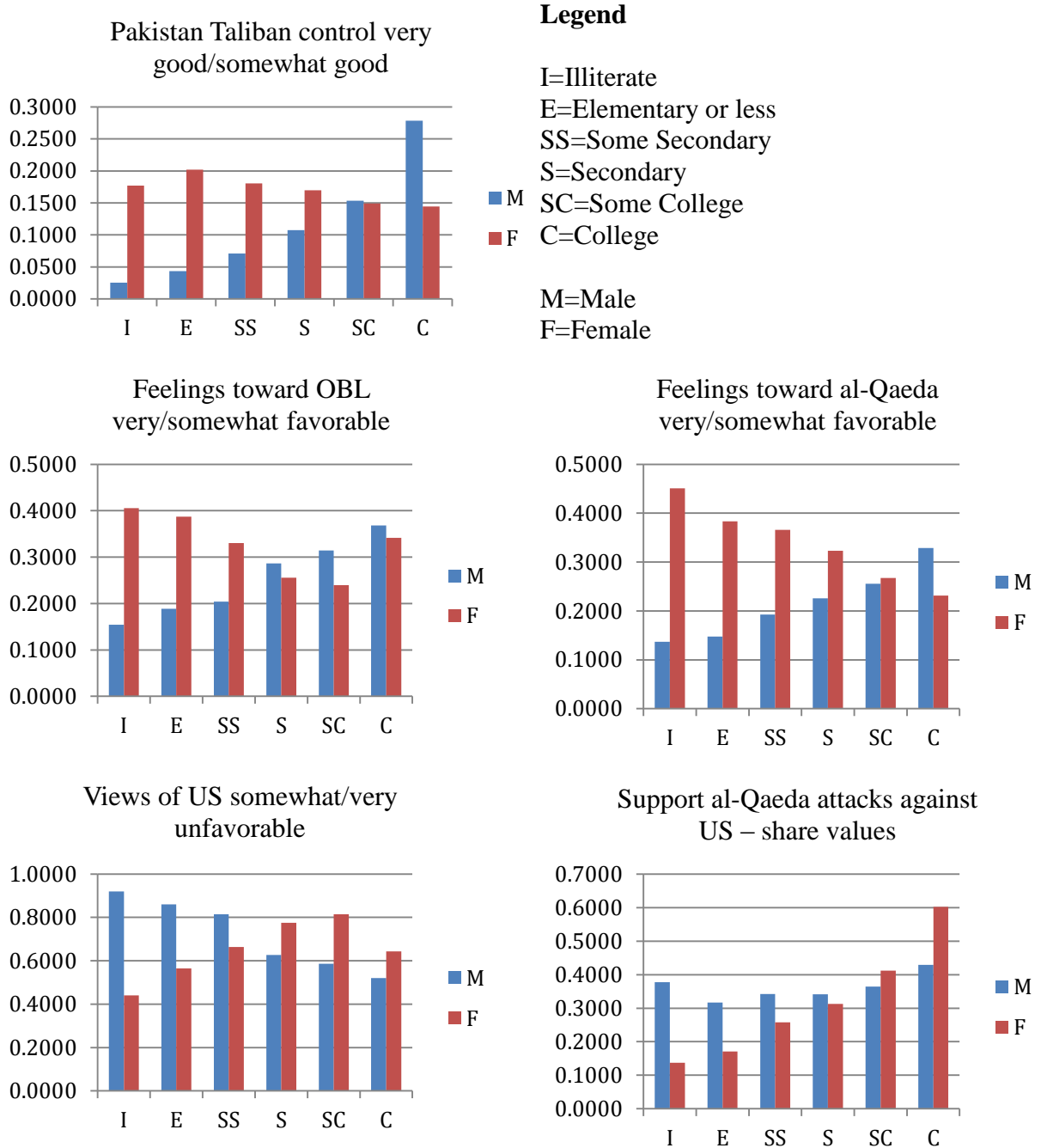


Table 1: Outcome Variables

Table 1A - View of Pakistan Taliban control

	If Pakistan Taliban were to gain control over all of Pakistan, would this be mostly good or mostly bad?
Very good	4.93
Somewhat good	12.54
Somewhat bad	7.92
Very bad	66.77
Don't Know/Refused	7.84

Table 1B - Feelings toward Osama bin Laden and al-Qaeda

	Osama bin Laden	Al-Qaeda
Very positive	9.23	5.41
Somewhat positive	14.10	21.66
Mixed	31.98	16.39
Somewhat negative	17.99	22.72
Very negative	14.64	21.48
DK/NR	12.05	12.34

Table 1C - Views of the U.S. and al-Qaeda attacks

	View of current U.S. govt		How do you feel about al-Qaeda
Very favorable	11.81	Support attacks against U.S. – share values	25.44
Somewhat favorable	14.50	Oppose attacks against U.S. – share values	33.58
Somewhat unfavorable	10.59	Oppose attacks against U.S. – don't share values	28.06
Very unfavorable	57.55		
DK/NR	5.55	DK/NR	12.92

Table 1D: Perception of Threats to Pakistan in 10 years

Threat to Pakistan in next ten years?	Activities of Islamist militants and local Taliban in FATA and settled areas	Activities of Bin Laden's tanzeem, al-Qaeda	Activities of religious militant groups
Critical threat	80.45	82.25	66.91
Important but not critical threat	13.98	12.37	18.23
Not a threat	2.29	2.06	11.01
DK/Ref	3.28	3.32	3.85

Source: PIPA 2009, own calculations

Table 2A: Education – PIPA Respondents (and Census)

Education Level	PIPA (% of respondents)*	1998 Census**
Illiterate	23.47	48.44
Elementary school or less	12.91	
Some Secondary School	24.65	20.90
Completed Secondary School	25.78	17.29
Some College	10.30	6.97
Completed University	2.24	5.96
DK/Ref	0.64	

Table 2B: Literacy Ratios by Gender

	1998 Census**	PIPA 2009 respondents*
Total	43.92	74.07
Male	54.81	87.45
Female	32.02	59.06

Table 2C: Education by Gender – PIPA*

	Male	Female	Total
Illiterate	14.21	34.67	23.62
Elementary school or less	12.97	13.02	12.99
Some Secondary School	29.09	19.79	24.81
Completed Secondary School	29.35	21.96	25.95
Some College	10.92	9.72	10.37
Completed University	3.46	0.85	2.26

Sources: * PIPA 2009 data, own calculations, ** Pakistan Census Bureau

Table 3A: PIPA Summary Statistics for Respondents' Age and Income

Age	% of respondents	2009 Monthly Household Income (Pak Rupees)	% of respondents
16-29	41.07	<3000	7.05
30-39	26.75	3001-10000	47.48
40-49	19.60	10001-15000	26.33
50-59	8.61	15001-25000	10.46
60+	3.98	>25000	0.73
		Refused	7.94

Table 3B: Personal Religiosity

	% of respondents
Very religious	48.50
Somewhat religious	40.10
Not very religious	5.40
Not at all religious	0.30
DK/NR	5.70

Table 3C: Summary Statistics for GTD Variables and Population

	Mean	SD	Min	Max
Total wounded in terror attacks in PIPA districts	76.13	128.67	0	349
Total killed in terror attacks in PIPA districts	22.26	33.14	0	85
Local Population (primary sampling unit)	6425.48	4409.47	178	19582

Table 4: Baseline Regression: The State of the Literature

	Control of Country	Views of OBL/ al-Qaeda		Views of U.S.	
	(1)	(2)	(3)	(4)	(5)
	Pakistan Control by Taliban good thing	Feelings towards OBL positive	Feelings toward al- Qaeda positive	View of current U.S. govt unfavorable	Support AQ attacks/ share AQ values
Female	0.660*** (0.23)	0.417*** (0.147)	0.493** (0.211)	-0.345 (0.247)	-0.288 (0.305)
Age	-0.028 (0.05)	-0.014 (0.048)	-0.023 (0.038)	0.054 (0.044)	0.078 (0.066)
Income	-0.074 (0.18)	-0.045 (0.103)	-0.136 (0.137)	0.02 (0.162)	0.168 (0.104)
Education	0.047 (0.06)	0.05 (0.055)	0.032 (0.046)	0.04 (0.042)	0.031 (0.074)
# of Obs	848	832	820	882	822

Ordered probit regressions, with robust standard errors (clustered by district) in parentheses.

Controls included but not shown: population, province dummies.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Female – Education Interaction

	Control of Country	Views of OBL/ al-Qaeda		Views of U.S.	
	(1)	(2)	(3)	(4)	(5)
	Pakistan Control by Taliban good thing	Feelings towards OBL positive	Feelings toward al- Qaeda positive	View of current U.S. govt unfavorable	Support AQ attacks/ share AQ values
Female	1.243*** (0.431)	0.993*** (0.362)	1.183*** (0.212)	-1.302*** (0.365)	-0.772** (0.375)
Age	-0.015 (0.05)	-0.037 (0.042)	-0.054* (0.03)	0.042 (0.042)	0.07 (0.06)
Income	-0.11 (0.163)	-0.062 (0.082)	-0.139 (0.091)	0.015 (0.123)	0.173* (0.091)
Education	0.177** (0.086)	0.117 (0.104)	0.111** (0.049)	-0.150* (0.08)	-0.057 (0.075)
Female*Educ	-0.187* (0.111)	-0.193 (0.121)	-0.246*** (0.069)	0.312*** (0.101)	0.163*** (0.059)
Religious	-0.157 (0.182)	0.345** (0.163)	0.289*** (0.109)	0.609*** (0.15)	0.189 (0.143)
Total wounded in terror attacks	0 (0.001)	0 (0.001)	0 (0.002)	0 (0.001)	-0.001 (0.001)
# of Obs	806	789	780	840	785

Ordered probit regressions, with robust standard errors (clustered by district) in parentheses.

Controls included but not shown: local population, province dummies.

* significant at 10%; ** significant at 5%; *** significant at 1%

Total wounded in terrorist attacks: data from the GTD, in the respondents' district in 2008. The results are very similar for the number of people killed in terror attacks in the district.

Table 6: Female – Education Level Interaction

	Control of Country	Views of OBL/ al-Qaeda		Views of U.S.	
	(1)	(2)	(3)	(4)	(5)
	Pakistan Control by Taliban good thing	Feelings towards OBL positive	Feelings toward al- Qaeda positive	View of current U.S. govt unfavorable	Support AQ attacks/ share AQ values
Female *	0.446	0.243	-0.268	0.12	0.569*
Elementary	(0.542)	(0.309)	(0.368)	(0.378)	(0.299)
Female *	0.038	-0.931***	-0.828***	0.652**	0.244
Some Secondary	(0.387)	(0.314)	(0.236)	(0.313)	(0.213)
Female *	-0.755*	-0.757*	-1.298***	0.851**	0.707***
Secondary	(0.421)	(0.389)	(0.357)	(0.416)	(0.234)
Female *	-0.205	-0.644	-1.140***	1.386***	0.728***
Some College	(0.573)	(0.461)	(0.347)	(0.464)	(0.226)
Female *	-1.315	-1.07	-0.474	1.4	0.426
College	(1.131)	(0.93)	(0.615)	(0.91)	(0.594)
# of Obs	806	789	780	840	785

Ordered probit regressions, with robust standard errors (clustered by district) in parentheses.

Controls included but not shown: female, age, income, education, religiosity, population, province dummies, number wounded in district in terror attacks in 2008. Omitted education category is illiterate.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7: Marginal effects coefficients based on regressions in Table 5

(Controls not shown)

A: Pakistan Taliban control	Very good	Somewhat good	Somewhat bad	Very bad
Female	0.1327** (0.0608)	0.1342** (0.0528)	0.0879*** (0.0284)	-0.3548*** (0.1253)
Education	0.0189* (0.0111)	0.0191** (0.0095)	0.0125** (0.0055)	-0.0504** (0.0244)
FemalexEducation	-0.0200 (0.0141)	-0.0202 (0.0127)	-0.0133* (0.0075)	0.0535* (0.0328)

B: Views of OBL	Very positive	Somewhat positive	Mixed	Somewhat negative	Very negative
Female	0.1674*** (0.0557)	0.1264** (0.0628)	0.0444** (0.0222)	-0.1145** (0.0483)	-0.2237*** (0.0836)
Education	0.0197 (0.0169)	0.0149 (0.0144)	0.0052 (0.0050)	-0.0135 (0.0129)	-0.0264 (0.0228)
FemalexEducation	-0.0325* (0.0195)	-0.0245 (0.0176)	-0.0086 (0.0064)	0.0222 (0.0149)	0.0434 (0.0274)

C: Views of al-Qaeda	Very positive	Somewhat positive	Mixed	Somewhat negative	Very negative
Female	0.1386*** (0.0413)	0.2176*** (0.0501)	0.0750** (0.0320)	-0.0860** (0.0379)	-0.3452*** (0.0677)
Education	0.0130* (0.0071)	0.0203** (0.0083)	0.0070* (0.0042)	-0.0080* (0.0048)	-0.0323** (0.0141)
FemalexEducation	-0.0288*** (0.0095)	-0.0452*** (0.0120)	-0.0156* (0.0090)	0.0179*** (0.0063)	0.0717*** (0.0236)

D: Views of the U.S.	Very favorable	Somewhat favorable	Somewhat unfavorable	Very unfavorable
Female	0.2111*** (0.0734)	0.1205*** (0.0453)	0.0607*** (0.0182)	-0.3924*** (0.1187)
Education	0.0243* (0.0141)	0.0139 (0.0092)	0.0070* (0.0037)	-0.0452* (0.0259)
FemalexEducation	-0.0506** (0.0192)	-0.0289** (0.0128)	-0.0146*** (0.0054)	0.0940*** (0.0337)

E: Al-Qaeda and U.S.	Support attacks, share values	Oppose attacks, share values	Oppose attacks, don't share values
Female	-0.2453** (0.1202)	0.0057 (0.0271)	0.2396** (0.1230)
Education	-0.0180 (0.0237)	0.0004 (0.0020)	0.0176 (0.0236)
FemalexEducation	0.0517*** (0.0204)	-0.0012 (0.0059)	-0.0505*** (0.0184)

Table 8: Terrorist Events and the Perception of Threats to Pakistan

	Islamist Militants and Local Taliban not threat		al-Qaeda not threat		Religious Militant Groups not threat	
Female	0.595 (0.553)	0.61 (0.553)	0.699 (0.525)	0.706 (0.522)	0.398 (0.396)	0.399 (0.4)
Age	-0.064* (0.035)	-0.066* (0.034)	-0.058 (0.053)	-0.063 (0.052)	-0.077 (0.05)	-0.081* (0.048)
Income	-0.118 (0.088)	-0.139* (0.084)	-0.183* (0.108)	-0.199* (0.108)	0.019 (0.112)	0.009 (0.112)
Education	0.143 (0.095)	0.139 (0.093)	0.015 (0.082)	0.009 (0.079)	0.098 (0.083)	0.094 (0.083)
Female*Educ	-0.211 (0.142)	-0.21 (0.137)	-0.154 (0.115)	-0.157 (0.112)	-0.073 (0.118)	-0.073 (0.119)
Religious	-0.254 (0.202)	-0.297 (0.19)	-0.078 (0.161)	-0.119 (0.157)	-0.166 (0.2)	-0.193 (0.203)
Wounded in Terrorist Attacks	-0.004*** (0.001)		-0.002*** (0.001)		0 (0.001)	
Killed in Terrorist Attacks		-0.009* (0.006)		-0.004 (0.004)		0.001 (0.003)
# of Obs	858	858	857	857	855	855

Ordered probit regressions, with robust standard errors (clustered by district) in parentheses.

Controls included but not shown: population, province dummies.

* significant at 10%; ** significant at 5%; *** significant at 1%

Wounded refers to the total number of people wounded in terrorist attacks in the respondent's district in 2008, using GTD data. Killed refers to the total number of people wounded in terrorist attacks in the respondent's district in 2008, using GTD data.

Table 9: Selection of Unobservables to Observables Ratio

	Control of Country	Views of OBL/ al-Qaeda		Views of U.S.	
	(1)	(2)	(3)	(4)	(5)
	Pakistan Control by Taliban good thing	Feelings towards OBL positive	Feelings toward al- Qaeda positive	View of current U.S. govt unfavorable	Support AQ attacks/ share AQ values
Female	-249.8	-10.194	-13.8	6.198	8.20
Female*Educ	-27.714	-6.51	-15.35	5.723	4.43

For Female: $\frac{b_C}{b_{NC}-b_C}$, where b_C is the coefficient on female in the specification with controls, and b_{NC} is the coefficient in the specification without controls.

For Female*Educ: $\frac{g_C}{g_{NC}-g_C}$, where g_C is the coefficient on female*educ in the specification with controls, and g_{NC} is the coefficient in the specification without controls.

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Endnotes

ⁱ South Asia Terrorism Portal, accessed May 14, 2012 (<http://www.satp.org/satporgtp/countries/pakistan/>).

ⁱⁱ Pakistan's ex-President Musharraf stated this quite simply in a speech at Stanford in 2009: "Poverty, illiteracy cause terrorism" (Palo Alto Online News). The report of the 9/11 Commission (2004) also states that "Pakistan's endemic poverty, widespread corruption, and often ineffective government create opportunities for Islamist recruitment. Poor education is a particular concern."

ⁱⁱⁱ The report of the CGD Study Group on Pakistan argues that countering terrorism should not be considered the main goal of aid to Pakistan; development should.

^{iv} A related literature examines terrorism risk at the country level and finds that poverty and lack of education fail to predict terrorist events (Krueger and Maleckova 2003, Krueger and Laitin 2008, Abadie 2003).

^v In this analysis, Krueger does not use respondent-level data and thus only reports basic cross-tabulations. Based on his conclusion, he recommends that counterterrorism policy should focus on the content (quality) of education, rather than its quantity. He argues that participation in and support for terrorism is comparable to voting; that is, the more educated are more opinionated and confident about their opinions.

^{vi} In response to a separate question asking respondents about the Afghan Taliban, 54% of respondents think the Afghan Taliban regaining control over Afghanistan would be a very bad thing.

^{vii} A secondary school degree in Pakistan is typically a Matriculate degree, obtained after completing ten years of schooling and passing a board examination.

^{viii} All the results hold through when I replace population (a continuous measure) with a binary urban/rural variable.

^{ix} In another specification, I add squares of both age and income to account for non-linearities in these two variables (results available on request). The main results remain the same as before. In these specifications, higher incomes make views of al-Qaeda and bin Laden less positive, although this effect starts diminishing as incomes increase.

^x The focus here is on primary school enrollment.

^{xi} A great deal has been written about public versus private schools in Pakistan (especially Andrabi et al 2007 in their long-term LEAPS survey), and there is mounting evidence that (co-educational) private schools (with primarily local female teachers) are doing a better job in terms of educating students relative to public schools (on test scores and even civic values). However, the public/private school distinction cannot account for the differences in public opinion that I observe in the 2009 PIPA survey between educated men and women. As mentioned earlier, the women in the PIPA sample are unlikely to have been affected by an increase in private schools, since it has happened starting in the mid-1990s, and has occurred mainly for primary schools (whereas the effect I find is driven by the years of education around secondary school). Second, the current enrollment ratio for girls in private schools relative to public schools is quite close to that of boys: it would need to be much higher to help account for this effect.

^{xii} Hussain et al (2011) argue that public schools and madrassas teach religious discrimination and misinform students of the meaning of jihad, but their analysis does not differ by gender.