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by

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Abstract

Religion is a dominant influence in household decision-making and is an important factor in understanding intra-household bargaining power, especially within developing countries. It is important to understand the extent to which religious beliefs affect decisions made within the household when designing interventions to improve women's agency. This paper examines the fourth wave of the Indonesia Family Life Survey using the difference-in-differences method to analyze the impact of Islamic religiosity on the likelihood of allowing women within the household to make certain decisions in eight critical categories. While stereotypical beliefs may negatively correlate women's bargaining power and high levels of religiosity within the Islamic faith, the role of Muslim religiosity on women's bargaining power is found to be not statistically significant. This suggests that programming catering to religious norms is not adequate in improving women's autonomy within the household.

I. Introduction

Religion influences many factors of life for a large majority of the world's population. While the popularity of religious topics appears in areas of study such as psychology and medicine, relatively few studies have attempted to link religiosity to economic outcomes vice versa. Religion has been linked to less deviant behavior, better health, marital stability, and higher levels of self-reported well-being (Gorman, 2020). Conversely, religion has played a role in the construction of gender norms. Its hegemonic impact on women has defined their submission under "heads" of households as divinely ordained (Abraham, 2019). Social constructs such as religion have the potential to create social inequalities through certain expectations (Pangaribowo, Tsegai, Sukamdi, 2018). By understanding these implications, efficiencies may be improved not only within the household, but also beyond. This research study intends to understand the effects of religious and very religious Muslim households on gender-differentiated decision-making via the longitudinal dataset from the Indonesia Family Life Survey (IFLS).

The IFLS is an on-going longitudinal survey conducted by the RAND Corporation, an American nonprofit global policy think tank. The data is designed to provide information for studying behaviors and outcomes not only within the household, but also within the community. There are many factors collected and analyzed including consumption, income, assets, education, migration, labor market outcomes, marriage, fertility, contraceptive use, community engagement and program use, health care, processes of household decision-making and more (RAND, 2020). The sample demographic represents approximately 83% of the population which includes roughly 30,000 individuals across 13 out of the 27 provinces of Indonesia.

The IFLS dataset has been administered in waves over the past 21 years. Each wave contains both household level and community level data separated into books by some of the aforementioned components analyzed by RAND. The first wave, IFLS1, was conducted in 1993-1994, IFLS2 in 1997-1998, IFLS3 in 2000, IFLS4 in 2007-2008, and IFLS5 in 2014-2015. Religiosity was not measured until IFLS4; therefore, this study will utilize the fourth wave and the datasets within the household surveys, setting aside the datasets within the community surveys. Each wave is broken down into books, or various questionnaires, and this research will be using Book K, focusing on household characteristics and Book 3A, focusing on decision-making, religiosity, and religion.

The primary contribution of this study is estimation of quantitative measures of religiosity with respect to women's bargaining power using IFLS data and documentation. To address this, 10,900 observations within the IFLS4 dataset were observed from the questionnaires. I utilized the difference-in-differences method to analyze the differential effects of various combinations of Islam and religiosity on women's bargaining power across eight critical categories: food expenditure, large expenditure, children's clothing, education, and health, wives and husband's socialization, and wives clothing expenditure. The questionnaires were completed across Indonesian provinces where approximately 89% of the sample demographic identifies as Muslim.

The difference-in-differences method involves taking a control group and a treatment group and applying some sort of treatment to assess the impact in both groups pre- and post-

treatment. In the study, non-religious non-Muslims underwent various combinations of religion and religiosity to examine the effects on women's bargaining power across categories. Respondents who answered as very religious, religious, or somewhat religious were analyzed separate from those respondents who only answered very religious to examine differences in impact. Controls were added for sex, education level, and age to account for any differences in regression results.

While specific programming and resources can be beneficial to target women, as the next section outlines, I find no significant evidence of the impact of religiosity on women's bargaining power across all categories. I find, however, the constant, non-religious non-Muslims, is statistically significant for all categories, suggesting the mean of the control groups are different than zero. When controlling for education, however, certain educational levels demonstrate the positive and statistically significant impact on women's bargaining power for certain categories.

The remainder of the paper is organized as follows: Section II reviews empirical literature to establish background, Section III discusses the Indonesian setting, Section IV discusses the experiment and empirical approach, Section V presents two sets of results, and Section VI concludes with discussion.

II. Review of Empirical Literature

Previous literature outlines a "unitary" household was considered standard for most household bargaining models, which assumes that household members hold the same preferences based on an aggregate utility function (Agarwal, 1997). In the 1997 study done by Bina Agarwal, she attempts to employ more complex models to encompass intrahousehold decision making from a gender perspective. In addition, Agarwal suggests extending the bargaining model approach beyond the household into the community is imperative to understand the foundation on which these households are embedded: giving an idea to the social norms such as religion that shape the decision-making process.

In contrast to the more commonly accepted unitary approach, there are less agreed upon approaches to bargaining power: cooperative, noncooperative, and collective (Agarwal, 1997). Cooperative bargaining assumes members of a household bargain over pooled income, whereas noncooperative relaxes that assumption where each member of the household is responsible for his or her own utility. The bargaining approach contains cooperation and conflict as well as power, or the strength of one of the participating members' fallback position. Members of the household cooperate to hopefully make each better off, and that can take the form of who does what, who allocates what goods and services, etc. Until this study, policymakers assuming the unitary model directed resources to male household heads. However, a bargaining model could potentially take into account gender and point policymakers to the differences in efficiency, welfare, and equity implications by each gender of the recipient. Agarwal's study identifies complex determinants in bargaining power which implies both the social norms and external institutions affecting outcomes of bargaining.

Some of the economic outcomes that researchers have analyzed regarding religion include the effects of living arrangements and family planning across various studies. What

individuals do with the shared space within a household plays a large part in decision-making. A Pew Research Center study took a look across 130 countries to find that religious affiliation changes household dynamic (Pew Research Center, 2019). Household size and type are ways to compare living arrangements across the world. This study found that Muslims live in the largest households with an average of 6.4 people, Hindus at 5.7, Christians with 4.5, and Buddhists with 3.9 (Pew Research Center, 2019). The most common household, around 38% of the population, lives with extended family, however, Hindus are the religious group more likely to live with extended families.

Religious texts play a role in guiding marriage and the care of elders among other topics. These texts often promote specific family formations and assign roles for members to play within the household. In an interesting case, Nigeria's population is almost split between Muslims and Christians, whereas Muslims reside with approximately three more people than their Christian counterparts. This exemplifies the complication of isolating the causal impact of religion which is linked to not only economic and geographic factors, but also legal and cultural factors (Pew Research Center, 2019). Referring back to Indonesia, whose Muslim population accounts for 87% of the population, the living arrangements may illuminate how households are shaped in terms of marriage, childbearing, and resource allocation (United Nations, 2019).

In addition to the conversation surrounding living arrangements, a study in Northwestern Tanzania analyzed how gender and religion impact the reception of family planning. Individuals in Mwanza, Tanzania participated in twenty-four focus groups divided into gender-specific and religion-specific, Muslim and Protestant Christian, discussions surrounding family planning utilization (Sundararajan et al, 2019). Within the women's discussions, they expressed concern for the negative effect of contraceptive on their health and children, however, they also expressed interest in the ability of family planning to allow them to pursue income-generating activities while fulfilling household duties.

Results indicated that male authority with female embodied knowledge leads to the need for negotiation or no use of contraceptives (Sundararajan et al, 2019). In addition, participants differed in regard to the acceptance of family planning in respective religions. In this particular study, gender is an important factor in who "decides" the utilization of family planning. While males are considered the primary decision-makers about family planning, females describe an "embodied knowledge" of being able to make the decision about family planning. Men are considered heads of households in Mwanza; therefore, they are considered the ones who make the decision about family planning. This can have subsequential effects such as who makes decisions about the child when they are born, how is income allocated to cover the needs of children, medical services, etc. With religion showing strong influence in the uptake of family planning, the potential of religiosity affecting other aspect of household bargaining seems more plausible.

In addition, a study done by Pangaribowo, Tsegai, and Sukamdi in Indonesia using the IFLS dataset analyzed women's bargaining power and household expenditure by gender in Indonesia. Authors found that women's share of household assets and social capital on household food and nonfood expenditures varied. Women's asset shares were positively associated with expenditures on meat while conversely, women's asset shares had negative effects on adult goods expenditures such as tobacco and alcohol (Pangaribowo, Tsegai, Sukamdi,

2018). Furthermore, this study shows positive association with nonfood expenditures such as the education of children. Results also show that male-ownership of asset is still dominant across the country. The study also takes a look at community engagement programs such as Pemberdayaan Kesejahteraan Keluarga (PKK) and POSYANDU, both well-known women's communities. Most notably, the social capital of attending these programs had positive effects on intrahousehold power relations (Pangaribowo, Tsegai, Sukamdi, 2018). Knowledge is one way to enhance awareness of women regarding topics such as nutrition, education, and more, thus transforming the decision-making process to be more efficient within the household. While not necessarily linking religion or religiosity to gender-differentiate household bargaining, Pangaribowo, Tsegai, and Sukamdi's study sheds light on the positive outcomes of female empowerment and expenditures within Indonesian households.

III. Setting

Indonesia is the largest economy in Southeast Asia and the fourth most populous nation in the world. With a population of approximately 270.2 million, roughly 26.42 million individuals live below the poverty line (World Bank, 2020). Indonesia's effort to reduce poverty has made incredible gains since the Asian Financial Crisis of 1997 and it is now recognized as an emerging middle-income country. Indonesia's average GDP per capita is roughly $4,136, however, with such economic growth does not necessarily mean economic development (World Bank, 2020). Approximately 12.6% of the population still struggles to access clean drinking water and 39.2% of the population have limited accessibility to sanitation services (World Population Review, 2020). Despite this, Indonesia has a relatively high literacy rate of 95.4%.

Indonesia is unique in the sense that household dynamic, especially the role of women inside and outside of the household, has shifted dramatically over the past few decades following the Asian Financial Crisis of 1997. Religious intensity has heighted as well with Indonesia recognizing five major religions: Islam, Catholicism, Protestantism, Hinduism, and Buddhism. Indonesia has more than 300 ethnic and linguistic groups, the largest being Javanese, as well as over 700 spoken languages, the most widespread being Bahasa Indonesia. Indonesia is also the world's most populous Muslim-majority county where 87% of the population identifies as Muslims. Despite this majority, the Indonesian government officially recognizes Islam, Protestantism, Roman Catholicism, Buddhism, Hinduism, and Confucianism, where 9.87% are Christian, 1.69% are Hindu, .72% are Buddhist, and .56% pertain to other religions (World Population Review, 2020).

VI. Methods

i. Data

This study was completed through the use of the IFLS panel data and documentation, specifically the data in the fourth wave of the IFLS questionnaire. Respondents were asked questions regarding consumption, income, assets, education, migration, household characteristics, marriage, etc. This study focuses on the responses regarding religiosity on a scale from 1 to 4, 1 being very religious and 4 being not religious, as well as households whose members identify as Muslim. Those who responded as "very religious," "religious," or

"somewhat religious" were combined into a "religious" variable which is analyzed in this study. Outcome, or the dependent, variables in this study were asked to each respondent separately. The respondent would be asked, for example, "who makes decisions regarding food expenditure," or "who makes decisions regarding your child's health." Respondents would then choose a household member from A to P corresponding to the household member who made that specific decision. Options of household members included respondent, spouse, mother, father, son, daughter, etc. For this study, responses regarding who decided specific food and nonfood household expenditures were parred to only those respondents who were either the head of household or the spouse, which in this case would be A or B.

These questions were employed to capture whether religiosity and religion plays a role in who makes the decisions within a household and whether patriarchal stereotypes can be empirically significant. These questions were also used to capture whether more religious or less religious individuals allow women to make decisions in the household. The religion of primary focus is Islam, considering 87% of the population identifies as Muslim. Eight categories of decision-making were analyzed to capture if different types of expenditures played a role in who made those decisions in regard to the religion and religiosity of those households. The categories are food expenditures, large non-food expenditures, children's clothing, education, and health, wife's clothing and wife versus husband socialization expenses.

ii. Hypothesis

I hypothesize that religious Muslim households would show that women's household decision-making is less likely than non-religious non-Muslims for food expenditures, large expenses, children's clothing, education, and health expenses and husband socialization expenses potentially due to stereotypical patriarchal norms within religious beliefs. I hypothesize husband socialization will be the decision with the lowest likelihood of women being allowed to make this decision. I hypothesize Pesantren, an Islamic boarding school that focuses on religious texts, in very religious households will have a negative and significant effect on women's bargaining power. I also hypothesize that results with only very religious respondents reported will have a greater impact on wife's decision making than less religious counterparts.

iii. Empirical Strategy

A linear regression model looks at the effect that one or several independent variables has on one or many dependent variables. The independent variable, if manipulated, models the prediction in change in the dependent variable. Due to the nature of the IFLS panel data, the difference-in-differences technique was utilized in this study to include multiple observations across the same household. The difference-in-differences method compares the changes in outcome over time between the treatment group and the control group to estimate the overall impact of an interaction (World Bank, 2021). In this study, non-religious non-Muslims would be the control group and the treatment of interest would apply various combinations of religiosity and religion to compare these effects on household decisions. To compute the difference-in-differences method, you first calculate the before-after difference in the outcome (Y) for the treatment group, then do the same for the comparison group. The difference between the control

group and the comparison group forms the difference-in-differences estimation which is modeled as follows (Albouy):

$$DD = (\bar{Y}_{Tre,Post} - \bar{Y}_{Tr,Pre}) - (\bar{Y}_{C,Post} - \bar{Y}_{C,Pre})$$

This model represents where $\bar{Y}_{Tre,Post}$ is religious Muslims, $\bar{Y}_{Tre,Pre}$ is religious non-Muslims, $\bar{Y}_{C,Post}$ is non-religious Muslims, and $\bar{Y}_{C,,Pre}$ is non-religious non-Muslims. In addition, I include a community fixed effects and cluster the standard errors at the household level. This technique captures how very religious or religious individuals are more likely to allow wives to make decision within the household compared to various combinations of religious and non-religious Muslims and non-Muslims.

This study models the research design of Pangaribowo, Tsegai, Sukamdi's 2018 study which analyzed women's bargaining power and household expenditures through the role of gender-differentiated assets and social capital, or the participation of women in community groups such as POSYANDU and PKK. Instead of measure women's social capital and assets in comparison to budget share of food and nonfood expenditure, this study will be observing the interaction of religion and religiosity to capture those individuals who are more likely to allow women's' share of household decision-making. In order to examine women's household decision- making, the function is modeled as follows:

$$Y_{it} = \beta_0 + \beta_1 X_R + \beta_2 X_G + \beta_3 X_{RG} + \varepsilon$$

The dependent variable is Y_{it} where it represents specific household decisions. This study observes decisions surrounding food expenditure, large non-food expenditure, children's clothing, education, and health, wife's clothing, and husband and wife socialization expenditures. The independent variables are X_R and X_G which represent religion and religiosity, respectively. X_{RG} is the interaction of religion and religiosity and ε is the error term (Pangaribowo, Tsegai, Sukamdi, 2018). Controls added to account for age, age squared, sex and education levels of elementary, junior high, senior high, special school for disabilities, and Pesantren, a Muslim boarding school.

The main independent variable in this study focuses on the interaction of those who identify as Muslim and very religious. Since this study focuses on male and female household interactions, any observation that was not specified as head of household or spouse was not observed in this study. The constant captures non-religious non-Muslims. X_R captures the change in Y_{it} among non-religious Muslims and non-religious non-Muslims. X_G captures the change in Y_{it} among religious non-Muslims and non-religious non-Muslims. X_{RG} captures how the interaction of religion and religiosity increase the likelihood of Y_{it} among Muslims compared to non-Muslims.

A total of 10,900 observations are included in this study accounting for only those respondents who identified as the head of household or the husband or wife of the household head.

Table I: Sample Demographics

Demographic Characteristic	Classification	Frequency	Percentage	Mean and Standard Deviation
Gender	Female	5,313	48.74%	
	Male	5,587	51.26%	
Age	18-20	1	.01%	46.69239
	21-30	762	6.99%	12.07495
	31-40	2,989	27.42%	
	41-50	3,487	31.99%	
	51+	3,661	33.587%	
Education Level	Elementary Not Completed	1,204	9.39%	
	Elementary	5, 385	49.403%	
	Junior High	1,637	15.018%	
	Senior High	1,967	18.045%	
	More Than HS	844	7.743%	
	Special School	0	0%	
	Pesantren	34	.31%	
	Other	9	.08%	
Marital Status	Married	10,900	100%	
Religion	Islam	9,689	88.89	
	Catholic	171	1.57	
	Protestant	401	3.68	
	Hindu	602	5.52	
	Buddhist	31	.28	
	Konghucu	1	.01	
	Other	5	.05	

Table I describes the sample demographics based on responses gathered from Book K and Book 3A of the IFLS dataset.

V. Results

i. Main Results

Table II: Effects of Religious Muslim Households on Wife's Decision-Making

	(1) Food	(2) Large Exp.	(3) Children Clothes	(4) Children Education	(5) Children Health	(6) Husband Socialization	(7) Wife Clothing	(8) Wife Socialization
Religious	-0.200*	0.201	0.100	0.167	0.178	0.0666	-0.124	0.208
	(0.101)	(0.133)	(0.134)	(0.129)	(0.133)	(0.140)	(0.133)	(0.139)
Islam	-0.146	0.174	0.142	0.218	0.191	0.0639	-0.103	0.219
	(0.110)	(0.136)	(0.138)	(0.132)	(0.137)	(0.146)	(0.138)	(0.143)
Religious Islam	0.151	-0.166	-0.0933	-0.169	-0.165	-0.0200	0.147	-0.219
	(0.109)	(0.136)	(0.139)	(0.132)	(0.136)	(0.146)	(0.138)	(0.143)
Constant	0.776***	0.635***	0.559***	0.608***	0.634***	0.610***	0.650***	0.542***
	(0.102)	(0.133)	(0.133)	(0.129)	(0.133)	(0.140)	(0.133)	(0.139)
Community FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10900	10900	10900	10900	10900	10900	10900	10900
R^2	0.096	0.156	0.155	0.165	0.167	0.135	0.151	0.144
Adjusted R^2	-0.005	0.062	0.060	0.072	0.074	0.038	0.057	0.048

Robust standard errors clustered at the household level in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table II reports the likelihood of religious and non-religious Muslims to allow women to decide on the eight categories of expenditure decisions compared to religious and non-religious non-Muslims. First, the constant is statistically significant, suggesting the mean of the control groups are different than zero. In the first column, those who reported religious but not Muslims are 20% less likely to allow wives to decide on food expenditure than non-religious non-Muslims. In the same column, row 2 captures how Muslims who report not religious are 14.6% less likely to allow wives to decide of food expenditure than non-religious non-Muslims. Row 3 compares religious impact on decision making when comparing Muslims and non-Muslims. The coefficient represents the difference-in-differences estimate. This estimate represents how much the average outcome of the treatment changed after applying the impacts of religion and religiosity compared to what the average outcome would be if that treatment was not applied. The expected mean change in women's food expenditure decision-making is 15% more likely between religious and non-religious Muslims compared to religious and non-religious non-Muslims. The difference in food expenditure decision-making by taking religious Muslims and non-religious Muslims is greater than the difference in food expenditure decision-making by non-religious Muslims and non-religious non-Muslims. Despite this, religiosity does not have impact due to lack of statistical significance.

In addition to food expenditure decision-making, large expenditure decision-making shows similar results. Column 2 reports how religious non-Muslims are 20.1% more likely to allow women to make large expenditure decisions and non-religious Muslims are 17.4% more likely to allow women to make that same decision. The expected mean change in women's large expenditure decision-making is 16.6% less likely between religious and non-religious Muslims compared to religious and non-religious non-Muslims. Likewise, for children's clothing, education, and health decision-making, the difference in religious and non-religious Muslims are 9.3%, 16.9%, and 16.5% less likely to allow women to make these decisions in comparison to religious and non-religious non-Muslims, respectively. Again, religiosity does not have a statically significant impact on these household decisions.

The last categories of decision-making also lack statistical significance when analyzing the impact of religiosity when comparing Muslims and non-Muslims. Expenditure decisions surrounding husband and wife's socialization expenditures reports how religious non-Muslims are only 6.66% more likely to allow women to make husband socialization decisions and non-religious Muslims are roughly the same. Conversely, religious non-Muslims are 20.8% more likely to allow women to make their own socialization decisions and non-religious Muslims are roughly the same21.9% more likely. The impact of religiosity in column 8 makes the likelihood of women's making decisions over their own socialization 21.9% less likely compared to roughly 2% for husband's socialization expenditures when comparing Muslims and non-Muslims. Wife's clothing expenditure decision-making similarly shares a lack of statistical significance when analyzing the impact of religiosity.

Overall, the difference-in-differences estimates for the impact of religiosity are not statistically significant for all categories of decision-making. However, all constants show that non-religious non-Muslims likelihood to allow women to make decisions regarding food, children, socialization, etc. is statistically significant for all categories.

Table III: The Effects of Religious Muslim Households on Wife's Decision-Making Controlling for Sex, Age, & Education

	(1) Food	(2) Large Exp.	(3) Children Clothes	(4) Children Education	(5) Children Health	(6) Husband Socialization	(7) Wife Clothing	(8) Wife Socialization
Religious	-0.0382	0.193	0.177	0.176	0.192	-0.0419	-0.0485	0.278*
	(0.0725)	(0.137)	(0.133)	(0.125)	(0.130)	(0.132)	(0.131)	(0.134)
Islam	-0.0302	0.163	0.183	0.217	0.195	-0.00513	-0.0499	0.272*
	(0.0790)	(0.140)	(0.137)	(0.129)	(0.134)	(0.137)	(0.135)	(0.136)
Religious Islam	0.0459	-0.156	-0.142	-0.173	-0.173	0.0535	0.0976	-0.263
	(0.0791)	(0.140)	(0.138)	(0.129)	(0.133)	(0.138)	(0.136)	(0.137)
Female	-0.577***	0.0184*	-0.257***	-0.0388***	-0.0616***	0.342***	-0.255***	-0.259***
	(0.00866)	(0.00727)	(0.00858)	(0.00731)	(0.00704)	(0.00867)	(0.00980)	(0.00844)
Age	0.00210	0.000511	0.00230	0.00444	0.00603*	0.00263	-0.000371	0.00167
	(0.00231)	(0.00224)	(0.00273)	(0.00243)	(0.00236)	(0.00250)	(0.00277)	(0.00232)
Age Squared	-0.0000230	-0.0000251	-0.0000623*	-0.0000707**	-0.0000852***	-0.0000188	0.00000119	-0.0000131
	(0.0000220)	(0.0000222)	(0.0000268)	(0.0000238)	(0.0000233)	(0.0000245)	(0.0000266)	(0.0000220)
Elementary	0.0119	0.0178**	0.0117	0.0129*	0.0151*	0.0212**	0.00476	0.0165*
	(0.00652)	(0.00592)	(0.00707)	(0.00639)	(0.00604)	(0.00704)	(0.00797)	(0.00672)
Junior High	0.0129	0.0178**	0.0112	0.0119	0.0144*	0.0218**	0.00533	0.0164*

	(0.00661)	(0.00599)	(0.00717)	(0.00648)	(0.00612)	(0.00714)	(0.00808)	(0.00682)
Senior High	0.0124	0.0181**	0.0115	0.0123	0.0151*	0.0223**	0.00496	0.0170*
	(0.00676)	(0.00611)	(0.00732)	(0.00659)	(0.00623)	(0.00729)	(0.00828)	(0.00697)
More Than High School	0.0120	0.0176**	0.0117	0.0123	0.0148*	0.0218**	0.00548	0.0164*
	(0.00681)	(0.00616)	(0.00738)	(0.00666)	(0.00630)	(0.00735)	(0.00832)	(0.00701)
Special School	-0.0607	-0.0960**	-0.0542	-0.0513	-0.0734*	-0.102*	-0.0316	-0.0893*
	(0.0387)	(0.0350)	(0.0417)	(0.0372)	(0.0353)	(0.0417)	(0.0468)	(0.0398)
Pesantren	0.0138	0.0236	0.00625	0.00203	0.0141	0.0146	0.00638	0.0219
	(0.0141)	(0.0127)	(0.0147)	(0.0120)	(0.0121)	(0.0150)	(0.0161)	(0.0145)
Other	0.00983	0.0187**	0.0135	0.0122	0.0147*	0.0222**	0.0101	0.0175*
	(0.00703)	(0.00644)	(0.00786)	(0.00694)	(0.00659)	(0.00758)	(0.00864)	(0.00733)
Constant	0.834***	0.639***	0.639***	0.560***	0.545***	0.424**	0.707***	0.523***
	(0.0933)	(0.147)	(0.148)	(0.139)	(0.143)	(0.147)	(0.149)	(0.145)
Community FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10900	10900	10900	10900	10900	10900	10900	10900
R^2	0.433	0.163	0.232	0.175	0.181	0.270	0.216	0.235
Adjusted R^2	0.369	0.069	0.145	0.082	0.088	0.187	0.128	0.149

Robust standard errors clustered at the household level in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table III reports how likely religious and non-religious Muslims are to allow women to decide on the eight categories of expenditure decisions compared to religious and non-religious non-Muslims while controlling for age, sex, and education. Again, row 3 captures the expected mean change in women's decision-making between religious and non-religious Muslims compared to religious and non-religious non-Muslims. While results are not statistically significant, there is a positive change is the likelihood of wives to make husbands socialization expenditure decisions based on the impact of religiosity. Controlling for sex, results show how religiosity impacts females compared to males and results are statistically significant and negative for all categories except large purchase expenditure decision. Age has very little impact on decision making.

From the descriptive statistics, almost 50% of respondents reported completing an elementary level education. The results are somewhat varied. While the percentages are small, the results indicate that an elementary education is positively and significantly associated with women's bargaining power for large expenditures, children's education and health, and husband's and wife's socialization expenditures. However, results also indicate that an elementary education is positivity but not significantly associated with women's bargaining power for food expenditures, child clothing, and wife's clothing decisions. To focus on Pesantren, this specific type of schooling had very small percentage impacts and was positively but not significantly associated with women's bargaining power for all categories of decision-making.

Table IV: The Effects of Very Religious Muslim Households on Wife's Decision-Making

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Food	Large Exp.	Children Clothes	Children Education	Children Health	Husband Socialization	Wife Clothing	Wife Socialization
Very Religious	0.0331	-0.0197	-0.00583	-0.0258	0.0157	-0.0111	0.0434	0.0156
	(0.0460)	(0.0361)	(0.0459)	(0.0405)	(0.0379)	(0.0419)	(0.0442)	(0.0364)
Islam	0.00710	0.00793	0.0509	0.0511*	0.0294	0.0428	0.0451	0.00426
	(0.0225)	(0.0206)	(0.0281)	(0.0252)	(0.0247)	(0.0251)	(0.0279)	(0.0232)
Very Religious Islam	-0.0183	0.0123	-0.0186	-0.00292	-0.0244	0.000710	-0.0170	-0.00867
	(0.0511)	(0.0402)	(0.0506)	(0.0446)	(0.0419)	(0.0467)	(0.0493)	(0.0415)
Constant	0.574***	0.836***	0.659***	0.776***	0.808***	0.677***	0.523***	0.746***
	(0.0205)	(0.0187)	(0.0254)	(0.0229)	(0.0224)	(0.0228)	(0.0253)	(0.0211)
Community FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10900	10900	10900	10900	10900	10900	10900	10900
R^2	0.096	0.156	0.155	0.165	0.167	0.135	0.152	0.144
Adjusted R^2	-0.005	0.061	0.060	0.072	0.073	0.038	0.057	0.048

Robust standard errors clustered at the household level in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table V: The Effects of Very Religious Muslim Households on Wife's Decision-Making Controlling for Sex, Age, & Education

	(1) Food	(2) Large Exp.	(3) Children Clothes	(4) Children Education	(5) Children Health	(6) Husband Socialization	(7) Wife Clothing	(8) Wife Socialization
Very Religious	-0.0144	-0.0215	-0.0306	-0.0316	0.00800	0.0151	0.0206	-0.00685
	(0.0380)	(0.0359)	(0.0422)	(0.0406)	(0.0377)	(0.0400)	(0.0424)	(0.0349)
Islam	0.0125	0.00594	0.0403	0.0449	0.0246	0.0498*	0.0461	0.0114
	(0.0217)	(0.0207)	(0.0277)	(0.0251)	(0.0246)	(0.0245)	(0.0280)	(0.0234)
Very Religious Islam	0.0258	0.0172	0.00898	0.00561	-0.0145	-0.0245	0.00461	0.0121
	(0.0425)	(0.0400)	(0.0468)	(0.0446)	(0.0417)	(0.0443)	(0.0474)	(0.0396)
Female	-0.577***	0.0189**	-0.256***	-0.0385***	-0.0611***	0.342***	-0.255***	-0.258***
	(0.00866)	(0.00726)	(0.00858)	(0.00730)	(0.00702)	(0.00866)	(0.00980)	(0.00844)
Age	0.00207	0.000642	0.00248	0.00458	0.00614**	0.00268	-0.000362	0.00174
	(0.00231)	(0.00224)	(0.00273)	(0.00243)	(0.00237)	(0.00250)	(0.00278)	(0.00232)
Age Squared	-0.0000227	-0.0000261	-0.0000639*	-0.0000718**	-0.0000861***	-0.0000192	0.00000112	-0.0000136
	(0.0000220)	(0.0000222)	(0.0000268)	(0.0000238)	(0.0000234)	(0.0000245)	(0.0000267)	(0.0000220)
Elementary	0.0120	0.0181**	0.0120	0.0131*	0.0153*	0.0211**	0.00487	0.0169*
	(0.00651)	(0.00592)	(0.00707)	(0.00638)	(0.00603)	(0.00705)	(0.00797)	(0.00672)

Junior High	0.0130*	0.0182**	0.0115	0.0121	0.0147*	0.0218**	0.00543	0.0168*
	(0.00661)	(0.00600)	(0.00717)	(0.00647)	(0.00611)	(0.00714)	(0.00808)	(0.00682)
Senior High	0.0125	0.0185**	0.0118	0.0125	0.0154*	0.0222**	0.00504	0.0174*
	(0.00676)	(0.00612)	(0.00732)	(0.00658)	(0.00622)	(0.00729)	(0.00827)	(0.00697)
More Than High School	0.0121	0.0180**	0.0120	0.0125	0.0150*	0.0217**	0.00560	0.0168*
	(0.00680)	(0.00616)	(0.00738)	(0.00665)	(0.00629)	(0.00736)	(0.00831)	(0.00702)
Special School	-0.0610	-0.0978**	-0.0556	-0.0522	-0.0746*	-0.102*	-0.0323	-0.0915*
	(0.0387)	(0.0350)	(0.0417)	(0.0371)	(0.0353)	(0.0417)	(0.0467)	(0.0398)
Pesantren	0.0140	0.0240	0.00644	0.00210	0.0143	0.0144	0.00669	0.0225
	(0.0141)	(0.0127)	(0.0147)	(0.0120)	(0.0121)	(0.0150)	(0.0161)	(0.0145)
Other	0.00987	0.0191**	0.0138	0.0124	0.0149*	0.0221**	0.0102	0.0179*
	(0.00703)	(0.00644)	(0.00786)	(0.00693)	(0.00659)	(0.00758)	(0.00863)	(0.00734)
Constant	0.799***	0.827***	0.811***	0.733***	0.731***	0.379***	0.656***	0.795***
	(0.0651)	(0.0617)	(0.0750)	(0.0673)	(0.0651)	(0.0688)	(0.0781)	(0.0658)
Community FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10900	10900	10900	10900	10900	10900	10900	10900
R^2	0.433	0.163	0.232	0.175	0.181	0.270	0.216	0.235
Adjusted R^2	0.369	0.068	0.145	0.082	0.088	0.187	0.128	0.148

Robust standard errors clustered at the household level in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.0$

Table IV reports the effects of strictly those respondents who reported very religious in the IFLS questionnaire. In comparison to the results from households who report varying levels of religiosity, there are interesting differing results per category of decision-making. While not statistically significant, the impact of high religiosity now negatively affects the likelihood of women to make food expenditure decisions. Even though these percentages are relatively insignificant, the impact of high religiosity now positively affects the likelihood of women to make large expenditure decisions.

Table V describes how likely solely very religious and non-religious Muslims are to allow women to decide on the eight categories of expenditure decisions compared to religious and non-religious non-Muslims while controlling for age, sex, and education. Again, while the percentages are still small, the results mirror that of the religious results. An elementary education is positively and significantly associated with women's bargaining power for large expenditures, children's education and health, and husband's and wife's socialization expenditures Contrary to the aforementioned hypothesis regarding Pesantren, very religious Muslims reflect very small percentage impacts that are positively but not significantly associated with women's bargaining power for all categories of decision-making. Overall, there is not much difference between religious and strictly very religious respondents in regard to women's bargaining power.

VI. Discussion and Conclusion

Women's bargaining authority has important implications for policy design. Resource distribution, child outcomes, and power relations are important when determining policy interventions, especially program targeting. This study examined the effects of varying levels of Muslim religiosity on women's bargaining power across eight critical categories using the difference-in-differences method.

Although stereotypical norms would imply women's bargaining power decreases with high levels of religiosity, there found to be no statistical significance for this claim across all categories. There was little to no difference found when separating religious from very religious respondents. This conclusion is inconsistent with the hypotheses made, claiming that for all categories, there would be a statistically significant and negative impact on the likelihood of women to make decisions within the household. Controlling for sex, age, and education, percentage changes within these control variables were very small with few holding statistical significance. Pesantren was positively but not significantly associated with women's bargaining power, which was contradictory to prior beliefs surrounding an education primarily focused on religious contexts. Results also indicate that religiosity impacts sex in a way that is statistically significant and negative for seven of the eight categories.

These results indicate that programs targeting or catering to religious norms are not adequate in improving women's autonomy within the household. While programs targeting women have been proving to improve other aspects of household decision-making, such as child outcomes, religiosity is not a factor that impacts such decisions.

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