Women's Status and Contraceptive Use in Egypt

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Abstract

Using the 1995 Egypt Demographic and Health Survey, we examine the association between various women's status variables and contraception use. We find that certain dimensions of female autonomy are indeed important for contraception use in the Egyptian context, while there is no clear relationship for other dimensions. We find that the decision-making index is the most important dimension of female autonomy in predicting a woman's use of modern contraception. The mobility index and the gender role index are respectively the second and third most important dimensions of women's autonomy that predict a woman's modern contraception use. Surprisingly, none of the financial autonomy variables are significant. We conclude that although certain women's autonomy variables predict a woman's modern contraception use, a governorates level of development is a much stronger predictor.

Statement of the Problem

Many authors define female autonomy in terms of access and control over resources (Govindasamy and Malhotra 1996, Safilois-Rothschild 1980). Specifically, Dixon (1978, cited in Mason 1986) argues that female autonomy is the extent that women have access and control over material resources and social resources. Material resources include food, land, income, and other forms of wealth. Social resources comprise of knowledge, power, and prestige (Dixon 1978, cited in Mason 1986).

Evidence shows that female autonomy is associated with such outcomes as infant mortality and health (Kishor 1995, Kishor 2000), gender equality in education (Rastogi 2003), and fertility outcomes such as contraception use (Govindasamy and Malhotra 1996), total desired fertility (Abadian 1996), and total number of children ever born (Balk 1994).

Specifically, findings from previous studies suggest that female autonomy facilitates increases in contraception use and declines in fertility (Abadian 1996, Balk 1994, Dyson and Moore 1983, Dharmalingam and Morgan 1996, Jejeebhoy 1991). Most authors argue that female autonomy is multi-dimensional (Balk 1994; Mason 1986, Mason 1987, Govindasamy and Malhotra 1996), meaning that different aspects of female autonomy such as financial autonomy and female mobility may affect contraceptive use or fertility outcomes in different ways and to varying degrees. In other words, dimensions of female autonomy can affect fertility outcomes differently, in terms of the direction, extent, and statistical significance (Balk 1994). Despite efforts to examine the relationship between female autonomy and fertility outcomes, it is still unclear which aspects of female autonomy affect contraceptive use and to what degree.

Due to a dearth of data on direct measures of female autonomy, scholars often are forced to use indirect measures of women's status such as education and employment. While these two measures likely capture aspects of women's status (Jeejeeboy 1995), they also have direct effects on fertility outcomes (Balk 1994). For example, education and employment both raise the costs of childbearing, thus influencing fertility outcomes. Furthermore, it is difficult to tease out whether education gives women more autonomy or if it provides them with the ability to learn about modern contraception (Mason 1986).

During the 1990s, more direct measures of female autonomy were conceptualized and incorporated into some surveys. Despite this crucial advancement, many scholars were still limited in the variables that could be used to measure women's status. The 1995 Egypt Demographic and Health Survey (DHS) includes one of the most comprehensive women's status modules, which allows us the unique opportunity to examine the complex relationship between female autonomy and contraception use.

Specifically, this paper examines the relationship between different dimensions of female autonomy and contraceptive use in a multi-level model. The dependent variable is current modern contraceptive use. The key explanatory variables at the individual level are a physical mobility index, a gender role index, a decision-making index, and financial autonomy variables.

We find that certain dimensions of female autonomy are indeed important for contraception use in the Egyptian context, while there is no clear relationship for other dimensions. We find that the decision-making index is the most important dimension of female autonomy in predicting a woman's use of modern contraception. The mobility index and the gender role index are respectively the second and third most important dimensions of women's autonomy that predict a woman's modern contraception use. Surprisingly, none of the financial

autonomy variables are significant. We conclude that although certain women's autonomy variables predict a woman's modern contraception use, a governorates level of development is a much stronger predictor.

Significance

The United Nations Conference in Cairo in 1994 brought women's empowerment, health, and reproductive issues to the forefront of development. Many multi-lateral, government, and non-governmental organizations are developing policies that promote women's empowerment, however, the different dimensions of women's empowerment are not well understood, especially as they relate to demographic processes (Presser and Sen 2000). By examining the relationship between different dimensions of female autonomy and contraceptive use, this paper will contribute to our understanding of the effects of women's autonomy on demographic processes, specifically fertility.

Furthermore, overall fertility has been declining around the world, however in some countries fertility levels remain high. Many scholars argue that female autonomy is one factor that facilitates fertility decline (Balk 1994, Dyson and Moore 1983, Mason 1986, Mason 1987). By further examining the effects of different dimensions of female autonomy on contraceptive use, this paper will contribute to our understanding of this complex relationship. This information is crucial if organizations are going to successfully promote female autonomy as a means to facilitate certain desired demographic outcomes, like the reduction of fertility. Specifically, this paper seeks to determine which dimensions of female autonomy facilitate the use of contraception.

Literature Review

Due to a lack of adequate measures of female autonomy, most early studies examine the relationship between female autonomy and fertility outcomes using education and employment as proxies for female autonomy. Many recent studies also use these measures as proxies for female autonomy despite their being problematic (Abadian 1996, Jejeebhoy 1991, Hogan et. al. 1999). Women's education and employment are not appropriate measures of female autonomy when examining its relationship to fertility outcomes (Mason 1986, Mason 1987). Education and employment both have direct effects on fertility outcomes. Both education and employment increase the cost of having children, which has a direct influence on fertility outcomes such as contraception use and desired number of children (Balk 1994, Mason 1987). Furthermore, while education may indeed capture some aspects of female autonomy, it also measures the ability of educated women to learn more about modern contraceptives (Mason 1986). Thus, complicating the use of education as a proxy for female autonomy.

While many scholars (Cain 1982, Caldwell 1982, Dyson and Moore 1983) deserve credit for observing, theorizing, and studying the association between female autonomy and fertility outcomes, in the mid-1980s Karen Mason (1986, 1987) made a unique contribution to the study of female autonomy by theorizing that female autonomy is multi-dimensional. Her work inspired other scholars to explore the relationship between different dimensions of female autonomy and various outcomes. However, data remained limited. Since the 1990s, some surveys have been conducted that have allowed scholars to examine different dimensions of autonomy and their relationship to fertility outcomes.

This section will discuss the extent that four dimensions of autonomy have been incorporated into the literature: authority in household decision-making, female mobility, gender attitudes, and financial autonomy variables. It will also review empirical support for these dimensions. Studies have incorporated more direct measures of autonomy such as decision-making power within the household, female mobility in countries that practice female seclusion or purdah, and measures of gender attitudes. As we will see financial autonomy as a dimension of female autonomy has not been examined in relation to fertility outcomes.

It is widely thought that women that have more say in household decisions are more likely to have more power and influence in the family, and thus are able to influence reproductive decisions such as contraception use (Govindasamy and Malhotra 1996). However the evidence for this is mixed. Bivariate analyses suggest that there is an association between female authority in the household and contraception use. However, multivariate analyses provide more complicated associations.

Two studies establish a bivariate relationship between the extent females have input in household decision-making and contraception use. In her study of Egypt, Kishor (1995) establishes that, for women, more authority in household decision-making is associated with contraception use. She finds this relationship to be stronger than other measures of female autonomy such as opinions and mobility. Similarly, examining data from Tamil, Nadu, India, Jejeebhoy (1991) finds that contraceptive use is associated with females who have more power to make household decisions.

One study finds a clear and strong relationship between authority in household decision-making and contraception use. In their study of Ethiopia, Hogan et. al. (1999) find clear

evidence that women who participate in household decision-making are more likely to use contraception.

Other studies find that authority in household decision-making may be associated with the use of contraception, however they find other aspects of female autonomy to have a stronger relationship. Balk (1994) finds that decision-making authority does indeed have a negative relationship with the total number of children ever born, however she finds that the effects of decision-making are not as strong as other female autonomy variables such a mobility and leniency of a female's household. This suggests that authority in household decision-making may influence fertility outcomes, however other dimensions of female autonomy may play a more important role.

Govindasamy and Malhotra (1996) find that female household decision-making power is associated with contraception use, however once they control for the power females have in reproductive decision-making, the effect of household decision-making is no longer significant. This suggests that perhaps input in reproductive decision-making is more important then having input in household decision-making.

Vlassoff (1992), in a study of a village in India, finds that decision-making power is associated with desired fertility. However, she concludes that women's status is not as important as village support for family planning. It is important to note that while she measured such aspects of women's status as decision-making power and isolation, these measures were not refined.

Mobility is an indicator of autonomy that is widely used when studying cultures that practice purdah, which is female seclusion. Purdah is a practice that limits women's physical movement. By limiting women's mobility, women's access to and control over resources are

constrained (Mason 1986). Furthermore, restricted mobility increases the dependency women have on other household members. On the whole, evidence suggests that there is an association between physical mobility and fertility outcomes.

In her analysis of Tamil Nadu, India, Jeejeeboy (1991) does not find a bivariate relationship between mobility and contraception use. Contrary to Jejeebhoy's findings, Kishor (1995), in her study of Egypt, establishes a relationship between mobility and contraception use. As mentioned above, she also establishes that household decision-making has a stronger association with contraception use than mobility.

Analyzing data from two Nepali villages, Morgan and Niraula (1995) find that women who experience more mobility are more likely to intend to have fewer children. Similarly, Balk (1994) finds that mobility has a strong negative effect on the total number of children ever born. Govindasamy and Malhotra (1996) provide more evidence that mobility is associated with fertility outcomes. Specifically, they find that the greater mobility a female has, the more likely she is to use contraception.

The next indicator of women' status that we will examine is attitudes about gender equality. The influence of this indicator has not been thoroughly examined. Balk (1994) was a pioneer at looking at attitudes that women hold as an indicator of women's status. She finds that attitudes do not significantly affect the total number of children ever born. Govindasamy and Malhotra (1996) examine the effects of attitudes about gender equality in financial matters and find a positive significant effect. However, once authority in reproductive decisions is added to the model, the variable attitudes regarding financial matters is no longer significant. This suggests that attitudes may have an influence on contraception use, however other aspects of women's autonomy may be more important.

While most scholars argue that female autonomy is related to the control and access to material resources, most studies have not incorporated these types of variables in their models (Balk 1994, Govindasamy and Malhotra 1996, Hogan et al 1999, Jejeebhoy 1991, and Kishor 1995). This is largely due to the lack of data. Many studies use female employment as a proxy for the control and access to resources. However, women who work do not necessarily have control over their incomes. Furthermore, as discussed above, female employment as a proxy for female autonomy is problematic when examining its relationship to fertility outcomes. The Egypt 1995 Demographic and Health Survey allows us the unique opportunity to directly measure access and control over material resources by using three financial autonomy variables.

Many studies provide evidence that female autonomy facilitates contraception use and fertility declines. While the majority of studies agree that female autonomy is multidimensional, many of these studies are limited in fully exploring the relationship between female autonomy and contraceptive use because they lack adequate data. This paper makes use of the Egypt Demographic and Health Survey, which has a module that asks questions about female autonomy. This paper makes a unique contribution to the literature because the EDHS allows us to explore the multidimensionality of female autonomy and determine which aspects of female autonomy influence contraception use.

Theoretical Model and Hypothesis

It is thought that the ability or willingness to innovate is a key intervening variable between female autonomy and contraceptive use (Caldwell 1986 cited in Mason 1987). Women who have access and control over resources, in other words, more autonomy, are more able to innovate. Specifically, the more autonomy a woman has in the household and in her marriage, the more ability she has to innovate.

The ability to innovate is an intervening variable for all the key explanatory variables. The gender role index, decision-making index, mobility index and financial autonomy variables increase the ability a woman has to innovate and therefore use contraception. Specifically, women that score high on these indices have more autonomy and therefore have the ability to engage in innovative behavior.

Women who have more decision-making power in the household and financial autonomy demonstrate that they have greater access and control over resources, thereby increasing their ability to innovate and use contraception.

Purdah or female seclusion is practiced in many parts of the Islamic world. There are several features of purdah: restrictions on spatial movement outside the home, veiling, and behavioral norms for interactions with men (Desai 1994). These restrictions on women decrease access and control of resources. Therefore, women that have more mobility have greater access and control over resources, more autonomy, increasing their likelihood to innovate and use contraception.

The gender role index captures the extent that women believe in gender role equality. Women that believe in greater gender role equality are more likely to experience or strive for this equality in their lives. Therefore, the gender role index is a proxy for female autonomy. It is expected that women who score high on the index are able to innovate and use contraception.

Hypothesis

The key female autonomy variables will have the following effects on contraception use:

Variable	Effect (Expected Direction)
Decision-making Index	+
Mobility Index	+
Gender Role Index	+
Financial Autonomy Variables	+

Data and Methodology

Many studies do not control for family planning effort or development when examining the relationship between female autonomy and fertility outcomes. This analysis controls for family planning effort and development at the macro level, therefore this analysis uses hierarchical linear modeling. Many studies examining contextual effects append the contextual variable to the individual-level data, however, standard errors for the contextual variables are underestimated in these models (Bryk and Raudenbush 1992). This bias is corrected through hierarchical linear modeling because the micro-level and macro-level are estimated simultaneously (Moore and Vanneman 2003).

There are two levels to this multi-level analysis; at the micro-level we look at the individual and at the macro-level the unit of analysis is governorates. Individual data are taken from the 1995 Egypt DHS. The entire survey was administered to 14,779 ever-married women ages 15 to 49. The women's status questionnaire was administered to a sub-sample of 7,121 women. The sample for this analysis restricts the women's status sub-sample to married women ages 15 to 30 who are not currently pregnant. We only have data for family planning effort and development for 21 of the 26 governorates, therefore the sample is further restricted to women living in 21 out of the 26 governorates. Thus, the final sample size is 2804 women living in 21 governorates.

The macro-level data is constructed from indices calculated by Khalifa et al. (1994). They created socioeconomic and family planning indices for 21 of the 26 governorates of Egypt. These indices will be discussed in further detail below.

Variables

Dependent Variable

For this analysis, we are examining the relationship between female autonomy and contraceptive use. Therefore, the dependent variable is current modern contraceptive use. Contraceptive use is a dichotomous variable coded 1 for modern contraceptive use and 0 for traditional and folkloric contraceptive use, and no method. Traditional and folkloric contraception use is coded as 0 because they are not as reliable as modern contraception use.

Individual-Level Independent Variables

There are six key explanatory variables. The decision-making index is the sum of the number of decisions a woman makes alone or jointly with her husband: visits to friends and family, household budget, having another child, children's education, children's marriage plans, food cooked in the house, medical attention for children, and use of family planning methods.

The mobility index measures the extent that a woman can go places alone: just outside the house, local market, health center, neighborhood for recreation, to visit family and friends.

The gender role index is measured by responses to 7 statements about proper gender roles. There are four agreement statements and three disagreement statements. The four agreement statements are: a woman should be allowed to work; a husband should help a working wife with the children and household chores; if girls are educated, it should prepare them for jobs, not just to be better mothers and wives; and if a wife disagrees with her husband she should express her opinion. The three disagreement statements are: men and women should not do the

same work, a 25 year old woman that has a job and is not married should be pitied; and a woman that works is not a good mother.

There are three variables that measure financial autonomy: bank account, owned assets index, and direct access to household money index. The variable bank account is coded 1 if the respondent has a bank account and 0 if not. The owned assets index is the sum of assets that the respondent owns herself: furniture, jewelry, land, house/apartment, stocks/bonds, livestock, other. The direct access to household money index measures the extent that the respondent can take money without permission or has her own money to buy specific items: daily items, staples, clothes for herself, and medicine.

The following controls are also included in the model: age, age squared, employment status, education, whether the respondent is Muslim, a household goods index, and a housing index. Employment status is coded 1 if a woman is currently working or has worked in the past 12 months and 0 if not. There are three dummy variables for education: "Primary education," "Secondary education," and "Post-secondary education," the omitted category is no education. Muslim is coded 1 if the respondent is Muslim and 0 if the respondent is Christian or other. The durable goods index and the housing index control for the wealth of the household. Three indicators are used to create the durable goods index: the household has electricity, piped water, and a toilet. Four indicators are used to create the housing index: the household has a radio, television, fridge, and bicycle.

Macro-Level Variables

Khalifa et al. (1994) creates socioeconomic and family planning effort indices for 21 of the 26 governorates. The socioeconomic index is constructed using seven variables: literacy rates for the population ten years and above, primary and secondary school enrollment, life

expectancy at birth, the infant mortality rate, per capita income, percent working in agriculture, and percent urban. Table 1 shows this index by governorate. The socioeconomic index scores range from –0.58 to 0.91. The indices are standardized scores.

Nine indicators are used to create the family planning effort index: number of the governorate Population Council meetings; number of women per family planning center, number of women per pharmacy, percent of women who have family planning services in their localities, number of information, education, communication, and home visits per 1000 women, number of home visits per women, record keeping and statistical reporting, social marketing, and contribution of private sector. Table 2 shows the family planning index by governorate. The Family planning index scores range from 11.72 to 23.73.

Results

Table 4 shows the coefficients and odds ratios of the hierarchical linear model.[1] In the column of coefficients for the model, we find an odds ratio of 1.1758 for the coefficient for the female decision-making index. This means that all else equal, a one unit difference in the decision-making index corresponds to a factor of 1.1758 increase in a woman's odds of using modern contraceptives. In terms of both the size and the statistical significance of the coefficient, decision-making is the most important dimension of autonomy in predicting a women's use of modern contraceptives.

For the coefficient for the gender role index, we find an odds ratio of 1.0424. This indicates that all else equal, a one unit difference in the gender role index is associated with a factor of 1.0424 increase in a woman's odds of using modern contraception. Out of the key

[1] Please note that I ran a regression that included only the micro level variables. The coefficients and the significance levels for the micro-level variables were similar in both this regression and the model that is presented in Table 4.

explanatory variables, in terms of the size and statistical significance, the gender index is the third most important dimension of autonomy in predicting a woman's modern contraception use.

The mobility index is the second most important dimension of autonomy in predicting modern contraception use. The odds ratio for the mobility index is 1.0844. This suggests that all else equal, a one unit difference in the mobility index corresponds to a factor of 1.0844 increase in a woman's odds of using modern contraception.

Surprisingly, none of the financial autonomy variables are significant. In other words, having a bank account, owning assets and having access to resources does not influence whether a woman will use modern contraception.

There are also some other interesting results. Interestingly, the coefficients for the primary and secondary education are not significant. This suggests that women who have a primary school education have the same odds of using contraception compared to women who do not have any education. Similarly, women who have a secondary education have the same odds of using contraception compared to women with no education. Surprisingly, the coefficient for post-secondary education is negative and significant. The odds ratio for the variable "post-secondary education" is 0.4652. In other words, the odds of a woman with a post-secondary education using modern contraception is 0.4652 times lower than a woman who has no education. The results for the education variables are counterintuitive and also contradict most prior research. Therefore, these coefficients must be interpreted with caution. In addition, further examination of these results is necessary.

It is also surprising that employment is not significant. This suggests that there is no difference in modern contraception use between women who currently work or worked in the

past 12 months compared to women who do not work and have not worked in the past 12 months.

Muslim is not significant in the model, suggesting that there is no difference in contraception use between Muslims and non-Muslims.

As expected, the durable goods index and the housing index both influence contraception use. Specifically, for the coefficient for the durable goods index, the odds ratio is 1.1462. This means that all else being equal, a one unit difference in the durable goods index corresponds to a factor of 1.1462 increase in a woman's odds of using modern contraception. Similarly, for the coefficient for the housing index, the odds ratio is 1.1563. This indicates that all else being equal, a one unit difference in the housing index is associated with a factor of 1.1563 increase in a woman's odds of using modern contraceptives.

Now, we will turn to the macro controls. Interestingly, the family planning index has no influence on contraception use. The family planning index is not significant. In other words, women who live in governorates with high levels of family planning effort have the same odds of using contraception as a woman who lives in a governorate with lower levels of family planning effort.

As expected, the development index is significant and is a strong predictor of contraception use. For the coefficient of the development index, the odds ratio is 2.090. This suggests that woman living in more developed governorates have a greater odds of using contraception compared to women living in governorates with lower levels of development.

Discussion

The most important dimension of female autonomy for predicting a woman's use of contraceptives is the decision-making index. The mobility index and gender role index are the

second and third most important dimensions of female autonomy that predict a woman's contraceptive use.

Surprisingly, the financial autonomy variables that measure whether a woman has a bank account, the assets she owns, and a woman's access to resources are not significant. One would expect that the more financial autonomy a woman has, the more power she accrues in her relationship with her husband and within her household, therefore translating in the ability to adopt innovative behavior. The results from this study are counterintuitive, therefore we should be cautious in reading too much in these findings.

While there are important compositional variables that predict a woman's contraception use, the strongest predictor is contextual. Specifically, the strongest predictor of a woman's contraception use is the level of development of the governorate. Other studies have found that female autonomy is not a strong predictor of fertility outcomes (Vlassoff 1992). In her study of a village in India, she finds that community support for family planning and a widespread sterilization campaign were associated with the desired number of children.

While decision-making power within the household, modern views about gender roles, and increased physical mobility may increase the likelihood of contraception use, the effects do not appear to be very strong. Rather the effects do not appear to be strong enough to advocate for women's empowerment in the name of fertility reduction. However, it is important to advocate women's empowerment in its own right. If we are interested in fertility reduction it appears that contextual factors such as development are important for the adoption of contraceptive use. Rather than advocating for women's empowerment, perhaps we should be advocating for increases in the levels of development in areas that have high levels of fertility.

One limitation of this study is that some women may not be using contraception because they are trying to become pregnant. It would have been ideal not include these women in the sample, however, due to data constraints, one cannot identify the women that are not using contraception because they are currently trying to get pregnant.

Another limitation of this study is that we only examine the relationship between female autonomy and contraception use for women who live in 21 of the 26 governorates. We had to restrict the sample to 21 governorates since we did not have family planning and development data for the other 5 governorates. If future studies control for development and family planning effort, it is necessary to obtain data for the other 5 governorates. However, since our micro results did not change in size or statistical significance once family planning and development were added to the model, one could run only a logistic regression for women in all of the 26 governorates.[2]

Finally, another limitation of this study is that it assumes that men and women have different preferences to use contraception and limit births. While some scholars have begun to examine the fertility goals of husbands and wives and their contraception use (Mason and Smith 2000), further research is still necessary.

It would also be fruitful for future research to examine the relationship between female autonomy and contraception use by comparing different countries. In some contexts, certain dimensions of autonomy may be important, while in different contexts these same dimensions may have no influence on contraception use.

[2] Note that I ran a regression that included only the micro variables As stated in a previous footnote, the size and significance levels for the micro-level variables were similar in both regressions. I chose to present the model that included the macro variables since development of a governorate appeared to be a strong predictor of contraception use.

Table 1 Socioeconomic Index by Governorate, Egypt 1989/1990

Governorate	Socioeconomic Index	Rank
High		
Port Said	0.91	1
Cairo	0.61	2
Suez	0.51	3
Alexandria	0.48	4
Dakahlia	0.27	5
Moderate		
Damietta	0.19	6
Ismailia	0.16	7
Aswan	0.12	8
Gharbia	0.08	9
Menoufia	0.08	10
Kalyubia	0.04	11
Giza	-0.05	12
Low		
Sharkia	-0.23	13
Kafrel-Sheikh	-0.27	14
Assuit	-0.26	15
Behera	-0.31	16
Fayoum	-0.37	17
Qena	-0.37	18
Menya	-0.42	19
Beni Suef	-0.51	20
Souhag	-0.58	21
Range	-0.58 to 0.91	

[1]Note that these are standardized scores.
Source: Khalifa et al., 1994.

Table 2 Family Planning Program Effort Index by Governorates, Egypt 1992/1993

Governorate	Family Planning Index	Rank
Strong		
Suez	23.73	1
Port Said	21.60	2
Alexandria	20.57	3
Damietta	19.12	4
Ismailia	19.09	5
Moderate		
Menoufia	17.86	6
Kafrel-Sheikh	17.64	7
Sharkia	16.38	8
Giza	16.22	9
Behera	16.00	10
Gharbia	15.68	11
Assuit	15.83	12
Dakahlia	15.66	13
Low		
Fayoum	14.85	14
Beni Suef	14.46	15
Souhag	14.25	16
Qena	14.25	17
Cairo	14.01	18
Aswan	13.81	19
Menya	12.91	20
Kalyubia	11.72	21
Range	11.72 to 23.73	

Source: Khalifa et al., 1994.

Table 3 Means and Standard Deviations

	Mean	Standard Deviation
Dependent Variable		
Current Contraceptive Use	0.270	0.440
Micro Level Variables		
Female Autonomy Variables		
Decision-Making Index	4.520	2.290
Gender Role Index	4.560	1.620
Mobility Index	2.640	1.500
Financial Autonomy		
Bank Account	0.010	0.110
Own Asset Index	1.040	1.020
Access to Resources Index	0.570	1.280
Micro Controls		
Age	24.830	3.860
Age Squared	631.630	187.090
Education		
Primary	0.180	0.390
Secondary	0.270	0.440
Post-Secondary	0.030	0.180
Employment	0.110	0.310
Muslim	0.930	0.260
Durable Goods Index	1.980	1.200
Housing Index	1.710	0.760
N	2804	women
Macro Controls		
Development Index	0.000	0.400
Family Planning Index	16.460	3.000
Constant		
N	21	governorates

Table 4 Hierarchical Linear Model: Coefficients and Odds Ratios

	Model Including Macro Variables		
Independent Variables	**Coef.**	**Robust S.E.**	**Odds Ratio**
Micro Level Variables			
Female Autonomy Variables			
Decision-Making Index	0.1620***	(0.0269)	1.1758
Gender Role Index	0.0416*	(0.0191)	1.0424
Mobility Index	0.0810*	(0.0370)	1.0844
Financial Autonomy			
Bank Account	0.1243	(0.4162)	1.1324
Own Asset Index	0.0441	(0.0310)	1.0451
Access to Resources Index	-0.0680	(0.0652)	0.9343
Micro Controls			
Age	0.5442***	(0.1144)	1.7232
Age Squared	-0.0090***	(0.0023)	0.9910
Education			
Primary	0.0984	(0.0963)	1.1034
Secondary	0.0875	(0.1781)	1.0914
Post-Secondary	-0.7653***	(0.2087)	0.4652
Employment	0.0445	(0.1212)	1.0455
Muslim	-0.0436	(0.1345)	0.9573
Durable Goods Index	0.1365**	(0.0447)	1.1462
Housing Index	0.1452*	(0.0583)	1.1563
n (women 15-30)	2804		
Macro Controls			
Development Index	0.7372**	(0.2253)	2.0900
Family Planning Index	0.0175	(0.0427)	1.0176
Constant	-0.7335***	(0.1146)	
n (governorates)	21		

[1]Please note I ran a regression with only micro variables and the results are consistent with these results. Table available upon request.

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