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Autonomy and Egyptian Women: Findings from the 1988 Egypt Demographic and Health Survey

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**AUTONOMY AND EGYPTIAN WOMEN:
FINDINGS FROM THE 1988 EGYPT
DEMOGRAPHIC AND HEALTH SURVEY**

Sunita Kishor

Macro International Inc.
Calverton, Maryland

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Executive Summary

Autonomy and Egyptian Women

In this study, data from the 1988 Egypt Demographic and Health Survey (EDHS-1988) are used to explore the multidimensionality of Egyptian women's autonomy. Three indices—the customary autonomy index, the noncustomary autonomy index, and the realized autonomy index—each measuring a different dimension of autonomy, are defined. The customary autonomy index measures the extent to which a woman believes that the wife should have a decision-making role in matters related to children, and the noncustomary autonomy index measures the extent to which she believes that the wife should have a decision-making role in areas of family life not specifically concerned with children. The realized autonomy index, on the other hand, measures the amount of control a woman actually has over her life, in terms both of the weight given to her opinions within the household relative to those of her husband and her degree of freedom of movement. These three indices of autonomy have been used to perform two separate analyses. The first examines whether the different dimensions of women's autonomy as measured by the three indices are equally associated with two demographic outcomes, i.e., the use of contraception by women and the survival of children up to the age of five. The second identifies factors that explain the cross-sectional variation in each separate index of autonomy. The latter analysis is done by using ordered logit estimation techniques and regressing each index of autonomy on several modernization, economic and cultural factors as well as on the other two dimensions of autonomy.

In keeping with the multidimensionality of women's autonomy, only moderate amounts of correlation between the three indices of autonomy have been found. Also, although the customary autonomy of Egyptian women appears to be high, their noncustomary autonomy and realized autonomy are not. Specifically, over 50% of Egyptian women had the highest possible score on the customary autonomy index, while only 12% had the highest possible score on the noncustomary autonomy index, and 17% had the highest score on the realized autonomy index.

High scores on all three indices are found to be associated with a higher use of modern contraceptives and a lower probability of having any children die before age five at each parity. This suggests that even in patriarchal societies such as Egypt, where autonomy may not be a culturally coveted female trait, higher female autonomy is positively associated with socially desirable demographic outcomes. Notably, customary autonomy, the one dimension of autonomy that typically is high among Egyptian women, has the weakest association with the use of modern contraceptives and zero infant deaths at each parity, and noncustomary autonomy, the dimension on which high scores are rare among Egyptian women, has the most positive and consistent association with these desired demographic outcomes.

Further, the different dimensions of autonomy are not affected in the same way by the same explanatory factors. Nevertheless, several modernization and economic variables have a positive and significant association with all three indices, although the strength of the association usually is the least for the customary autonomy index. On average, the greater the wealth of a household, the greater the exposure of the woman to the outside world through television viewing, and the more educated the woman and her husband, the greater is her probability of scoring high on all three indices. Of these variables, the impact of the husband's education is the greatest on women's scores on the realized autonomy index, and that of hours spent viewing television and women's own education is greatest on the noncustomary autonomy index. There is little difference in the impact of socio-economic status on the three indices. These results suggest that modernization efforts that affect women directly, for example, by increasing their level of education, affect women's autonomy most by altering their views about the role of wives in decision-making; modernization

efforts that affect women indirectly, for example, by raising the level of education of husbands, affect most their realized level of autonomy.

Urban living, especially current residence in urban areas, is found to be conducive to higher scores on noncustomary autonomy. However, urban living does not necessarily imply higher levels of customary and realized autonomy. Specifically, women living in the Urban Governorates, despite higher levels of noncustomary autonomy, have a much lower level of realized autonomy than women from all other areas with the exception of rural Upper Egypt. On the other hand, women living in both rural and urban Upper Egypt have a higher probability of scoring low on customary autonomy than women in other parts of Egypt. This suggests that perhaps the normative level of autonomy in decision-making with regard to children is lower in Upper Egypt than in other parts of the country.

Exposure to urban living before the age of twelve positively affects women's scores on the two indices measuring women's views on decision-making autonomy, while leaving their scores on realized autonomy unaffected. On the one hand, this result emphasizes the innovative nature of high scores on noncustomary autonomy. On the other, it suggests that the norm of high levels of customary autonomy is reinforced by early socialization in urban, rather than rural, living. Women who have spent most of their lives in the place of interview, are found to have significantly lower levels only of realized autonomy. Since neither customary nor noncustomary autonomy is affected by recent migration, the positive association of realized autonomy with migration is more likely to be due to the greater need for freedom of movement among migrant women than to the greater exposure of migrants to new ways of doing things.

The impact of women's employment on autonomy also differs for each dimension of autonomy. Only realized autonomy is higher among women who work, irrespective of whether or not they control their earnings or earn cash for their work. In contrast, whether women who work differ significantly in terms of their customary and noncustomary autonomy from those who do not work depends on whether the work is for earnings or not and the degree of control over earnings. In comparison with women who do not work at all, noncustomary autonomy is higher only among women who work and give most of their earnings to their families, and customary autonomy is higher only among women who work and keep most of their earnings for themselves. Women who are employed without cash earnings have a lower level of both customary and noncustomary autonomy than women who do not work at all.

Together these results imply that autonomy as measured by perceptions about women's decision-making roles is not affected by employment per se, but by access to, and control over, earnings derived from employment. Working without earnings consistently undermines women's perceptions about the control women should have over decision-making in both traditional and nontraditional realms. However, if women earn, more control over earnings does not necessarily imply that women will favor greater female input in decision-making in the nontraditional realm. Rather, the results suggest that more control over earnings translates into an increase in the likelihood that women will want to control decisions in their traditional areas of influence. On the other hand, the higher realized autonomy of women who are employed, irrespective of earnings and earnings control, may be due to their greater necessity for freedom of movement, a need that is unlikely to be mediated by earnings.

The study finds that few cultural variables affect any of the aspects of autonomy directly. Realized autonomy alone is lower among women who are Muslim, who live in large, perhaps non-nuclear households, and who have been married more than once. The lower realized autonomy of remarried women warns us against transplanting cultural conceptions acquired in one cultural setting to another. This warning is also relevant for assumptions about the impact of age at marriage on autonomy. The higher the age at first marriage the lower (not higher, as should be expected) the probability of high scores on noncustomary autonomy.

The co-residence of husband's relatives is directly associated with lower levels of noncustomary autonomy but not with women's realized autonomy levels. Taken together, these results suggest that co-residence of in-laws may not *cause* women's autonomy to be lower, but that women who co-reside with their husband's relatives may be more likely to have traditional views about women's roles.

Given the patriarchal basis of the Egyptian family, the number of children, especially sons, was expected to enhance women's autonomy. Instead, the higher the number of sons and daughters a woman has, the higher the probability, on average, of her scoring low, especially on customary autonomy. This finding corroborates the positive relationship of high fertility with low women's status, and suggests that higher fertility lowers women's autonomy even in their traditional areas of influence.

Finally, controlling for modernization, economic, and cultural factors, all aspects of autonomy are found to be positively and significantly related to one another. Importantly, however, changes in noncustomary autonomy affect the other two aspects of autonomy the most. Thus, while the three dimensions of autonomy tend to go together, on average, women who score high on the noncustomary autonomy index are more likely to also score high on the other two dimensions of autonomy, than women who score high on either customary autonomy or realized autonomy.

The following findings:

- noncustomary autonomy is the one aspect of autonomy that is most consistently related to socially desired demographic outcomes,
- when scores on the noncustomary autonomy index are high, scores on other dimensions of autonomy are also most likely to be high, and
- noncustomary autonomy, more than any other aspect of autonomy, is most consistently related to modernization influences

together yield an important policy conclusion. They suggest that even without making difficult and often culturally less desirable changes to the kinship structure, all dimensions of women's autonomy can be enhanced by manipulating the modernization variables, variables that are, happily, most amenable to policy manipulation.

Chapter 1

Introduction

The centrality of both women and men in the traditional Islamic family unit derives from the essential complementarity of their customary roles and responsibilities (Rugh, 1984). Men are seen as the protectors of the family and must provide for its maintenance. Women, on the other hand, are absolved of the burden of providing for their own and their family's economic needs since they bear the responsibility of procreation and rearing of a generation (Hashemi, 1981; Rugh, 1984; Moghadam, 1992).

Although this complementary gender-based division of responsibilities is likely to have the purported effect of sheltering women, it undoubtedly also mediates women's access to the outside world, and legitimizes a decision-making process that places the right to make key decisions affecting women's lives in the hands of male kin. Socialization in this tradition is unlikely to encourage in women a desire to take direct control of their own lives and resources without the intervention of male kin. A desire for autonomy, especially outside the domestic realm, is more likely to be seen as a threat to the assigned mutuality of male and female roles.

Despite the apparent rigidity of traditional roles, however, there are several reasons to expect a large amount of variation in female autonomy even within Islamic society. Female autonomy is not unidimensional (Mason, 1987), and even the traditional role assignment, which gives women little control over most spheres, is compatible with at least some female autonomy and control within the domestic sphere. Further, differences between women in socioeconomic status, education levels, and exposure to nontraditional thinking are also likely to translate into differences in female autonomy in both the domestic and the nondomestic sphere (Rugh, 1984). In addition, the imperatives of changing economic and social conditions, often outside the control of individual family units, may require women to take on responsibilities outside their traditional realm. These factors suggest that there should be variation in the degree of autonomy desired and exercised even within the system of complementary traditional roles.

Additionally, there are also likely to be situations, such as when women are abandoned or widowed, wherein the mutual system of obligations that is the foundation of the traditional complementarity of gender roles is violated, forcing women to fend for themselves and their children. Thus, even within a social system in which female autonomy may not be a culturally coveted virtue, we are likely to find a large amount of variation in autonomy, both because overall autonomy levels will vary across women according to individual circumstance and opportunity, and because autonomy is multidimensional so that women could exercise autonomy in some spheres and not in others.

This study explores the multidimensionality of female autonomy in Egypt by defining three different measures of autonomy based on questions asked in the 1988 Egypt Demographic and Health Survey. Using empirical tools of analysis, the extent of variation in each dimension is modelled and evaluated in terms of several modernization, economic, and cultural factors. The study also examines whether each of the different dimensions of autonomy is associated with two demographic outcomes in Egypt, contraceptive use and child survival. Whereas a higher rate of child survival is widely accepted as a socially desirable demographic outcome, raising the rate of contraceptive prevalence is a stated objective of Egypt's population strategy (National Population Council, 1991). A positive association of female autonomy with these demographic outcomes even within a setting in which such autonomy may not be considered culturally desirable, will suggest that female autonomy can at least be recommended on desired demographic grounds.

To this end, we define in Chapter 2 the three different measures of autonomy. Two of these measures index the degree to which women believe that they should have a decision-making role within the domestic and the nondomestic sphere; the third measure indexes women's degree of realized autonomy. In Chapter 3 we examine the association of all three dimensions of autonomy with two demographic outcomes, contraceptive use and child survival. The objectives are to determine whether higher levels of autonomy are associated with desired demographic behavior and whether this association varies by the dimension of autonomy being measured. The rest of the study is devoted to examining the factors that help explain variation in the different dimensions of autonomy measured by the three autonomy indices. Thus, in Chapter 4, we use existing literature to develop theoretical hypotheses about the factors that should explain the variation in autonomy levels in Egypt. Variables and methods used to test these hypotheses and results of the multivariate analyses of the three different dimensions of autonomy are discussed in Chapter 5. Finally, in Chapter 6, we summarize the results and evaluate their implications.

Egypt provides an ideal setting to study the interrelationships between tradition, development, demographic behavior and female autonomy. Egypt is an Islamic society with relatively rigid norms about gender roles (Rugh, 1984) combined with relatively high levels of fertility, infant mortality and adult illiteracy. Simultaneously, it is a country with a medium level of economic development and urbanization. In 1988, Egypt had a per capita income of U.S.\$660 and was ranked among the middle income economies of the world (World Bank, 1991). Half of its 50.2 million population lived in urban areas. However, the total fertility rate was 4.5, the infant mortality rate was 88 per 1000 live births, only 38% of married women of child-bearing age were using contraception, and about two thirds of adult women were illiterate.

Chapter 2

Defining Alternative Measures of Autonomy

The data used in this study are from the standard recode file of the Egypt Demographic and Health Survey (EDHS) conducted in late 1988.¹ This survey sampled a total of 8911 ever-married women in Egypt of whom 8219 were currently married. Earlier research suggested the usefulness of these data for examining women's status issues (Govindasamy and Malhotra, 1994).

The EDHS included a range of questions regarding women's perceptions of who *should have* and who *does have* decision-making powers within the family, as well as questions on the freedom of women to go outside the home. These questions are combined into three different indices of autonomy and are listed in Table 2.1. The questions on the autonomy of women were asked only of currently married women; therefore the analysis is restricted to this subsample.

The questions on who should have decision-making powers within the family were grouped according to whether they concerned the procreation and rearing of children or whether they addressed other areas of family life not specifically concerned with children. Since the care of children, and to a lesser extent the decisions surrounding contraception and procreation, fall within the domestic realm over which women traditionally have had some control, the former group of questions were combined to form the index of customary autonomy. The questions not specifically concerned with family planning or children were combined to form the index of noncustomary autonomy. The latter index measures the extent to which women believe that women should have decision-making powers in general, as well as in areas such as household finances, which are outside their traditional realm of influence. The expectation is that more women are likely to score high on the customary autonomy index, which measures women's views on women's control over decision-making in their traditional domestic domain, than on the noncustomary autonomy index, which measures women's belief that women should have decision-making powers in areas not traditionally within their domain of influence.

The questions on who is perceived by the respondent to actually have decision-making power within the family and who decides on whether the respondent is allowed freedom of movement outside the home were combined to form the index of realized autonomy. This index reflects the actual amount of autonomy women have rather than the amount they believe women should have.

Along with the list of questions used to construct the indices, Table 2.1 provides the weight given to each response, which, depending on the response, is either 1 or 0. The index value for every woman is the sum of the weights of her responses. The minimum value for all three indices is 0. The maximum is 4 for the indices of customary autonomy and realized autonomy (since they are based on four questions each) and 5 for the noncustomary autonomy index (which is based on 5 questions).

The responses "wife" and "both" to all four questions used to construct the customary autonomy index and to the first three questions used to construct the noncustomary autonomy index are both assigned a weight of 1. This assignment of weights does not distinguish between women who believe that wives

¹The Egypt Demographic and Health Survey was a collaborative effort of the Egypt National Population Council (Cairo, Egypt) and the Institute for Resource Development/Macro Systems Inc. (IRD). This survey was funded by the United States Agency for International Development (USAID) (Contract No. DPE-3023-C-00-4083-00) and the Government of Egypt.

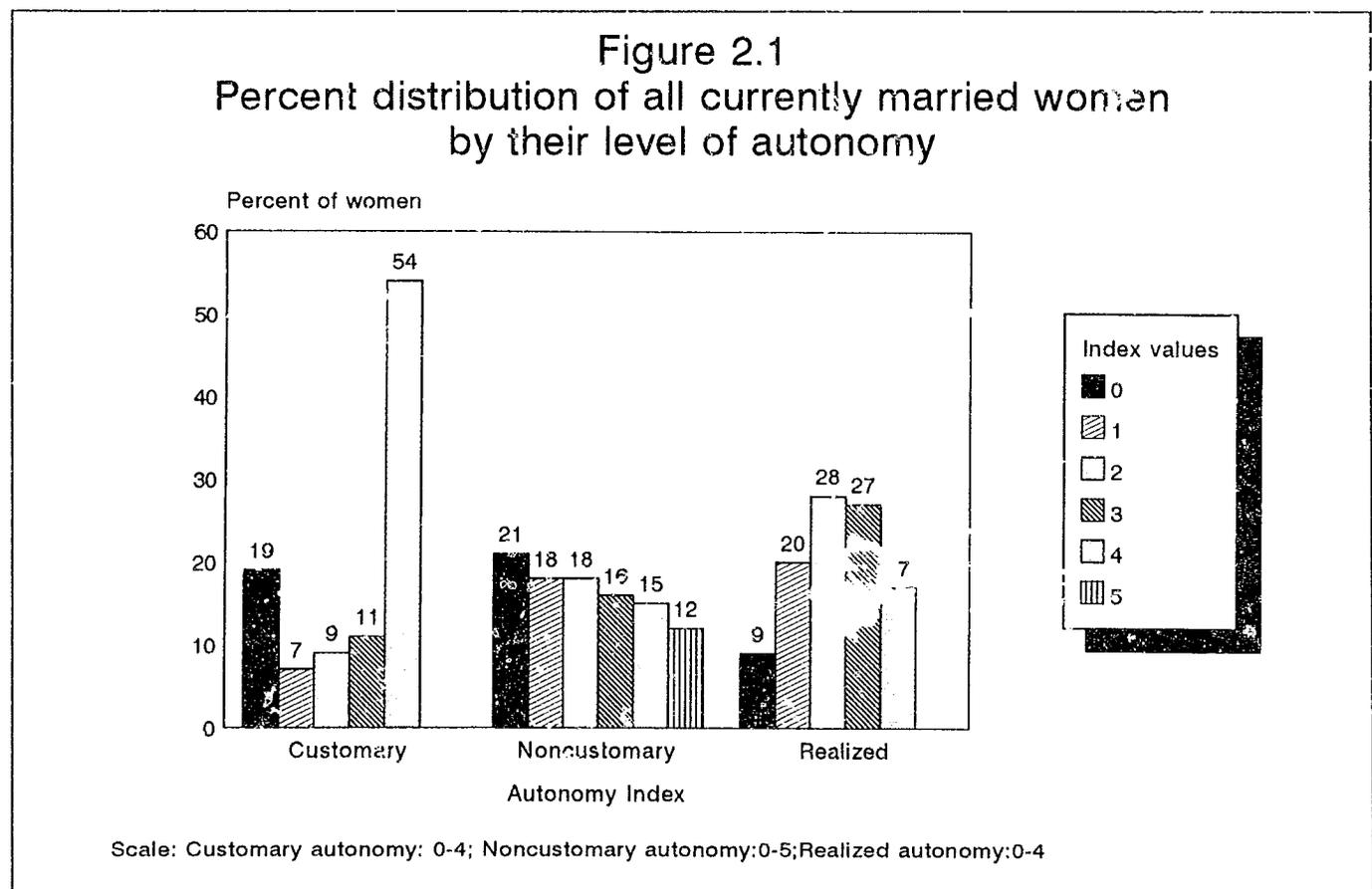
Table 2.1 Questions used and weights given to each possible response when constructing the autonomy indices

Questions	Possible responses	Weight given to each response
<u>Customary Autonomy Index:</u> Index measuring the extent to which women believe that they should have the last word in family planning, in the decision to have another child, and in their children's education and marriage.		
• Who should have the last word on the following -- the husband, the wife, both, or someone else?		
- Having another child	Husband Wife Both Other	0 1 1 0
- Children's education	Same as above	Same as above
- Children's marriage plans	Same as above	Same as above
- Use of family planning methods	Same as above	Same as above
<u>Noncustomary Autonomy Index:</u> Index measuring the extent to which women believe that women should have decision-making powers in general and in areas outside their traditional roles.		
• Who should have the last word on the following -- the husband, the wife, both, or someone else?		
- Visits to friends or relatives	Same as above	Same as above
- Household budget	Same as above	Same as above
- Lending or borrowing	Same as above	Same as above
• Now I would like to talk to you about a different topic. In general if a wife disagrees with her husband should she keep quiet or speak up?	Keep quiet Speak up Not sure/Don't know	0 1 0
• Do you think a wife respects a husband more if he insists she accepts his opinion in everything or if he listens to and accepts her opinions?	Insists on his opinion Listens and accepts her opinion Not sure/Don't know	0 1 0
<u>Realized Autonomy Index:</u> Index measuring the extent to which women perceive that they have decision-making powers and their freedom of movement.		
• In your home, does your point of view carry the same weight as your husband's, less weight than his point of view, or isn't it taken into account at all?	Same weight as husband Less weight than husband Not taken into account at all Other	1 0 0 0
• Do you go out with your husband to purchase major household items/clothing?	Yes No	1 0
• Does your husband allow you to go out alone or with your children to buy household items?	Yes alone Yes with children Not allowed Other	1 0 0 0
• Does your husband allow you to go out alone or with your children to visit relatives or friends?	Yes alone Yes with children Not allowed Other	1 0 0 0

should have sole decision-making powers and women who believe that wives should share such powers equally with their husbands. The rationale for taking this approach rather than one that weights only the response "wife" as 1 is two-fold: a) in a strongly patriarchal society such as Egypt, the belief that women should have decision-making powers at least equal to their husbands, while being clearly less innovative than a belief that women should have sole power is, nonetheless, a significantly strong indication of women's believing that they should control important aspects of their lives; and b) since the questions refer to decisions about the welfare of the family and not about the welfare of the woman alone, an answer that does not give sole power to either husband or wife, but gives it jointly to both seems a reasonable expression of autonomy within a conjugal and familial context. For the construction of the realized autonomy index, a woman is considered to have autonomy only if she is allowed to go out alone and if her opinion carries as much weight as her husband's (i.e., the maximum weight allowed by the question).

The different aspects of the autonomy of women as measured by the three indices are only moderately correlated. The highest correlation, 0.54, is between the indices of noncustomary autonomy and customary autonomy. The correlation of the indices of noncustomary autonomy and customary autonomy with the index of realized autonomy is lower, at 0.46 and 0.34, respectively. The moderate correlations among the three indices support the assumption that the three indices are tapping distinct dimensions of the autonomy of Egyptian women.

Figure 2.1 shows how women are distributed across the values of each of the three indices. As expected, more women are likely to believe that women should have at least an equal say in matters related to children than in matters not related to children. In fact, over 50% of the women score the maximum value on the index of customary autonomy as compared to only 12% on the index of noncustomary autonomy.



However, it is notable that almost one fifth of women believe that women should not have any control in decision-making even with regard to the procreation and lives of children. A similar proportion of women do not believe that women should have control in areas not concerned with children. The distribution of women across the values of the index of realized autonomy approximates a normal curve; most women are likely to have a medium level of autonomy.

Chapter 3

Female Autonomy and Demographic Behavior

Using the EDHS data we now examine whether two important demographic outcomes, the current use of contraception by women and the survival of their young children, are associated systematically with the three defined indices of autonomy. Note that the current use of contraception is highly correlated with fertility in Egypt (Sayed et al. 1989). Although causality between the indices of autonomy and the two demographic outcomes cannot be determined, we try to detect differences in the sensitivity of the demographic variables to each of the three autonomy indices.

The overall expectation is that women with greater autonomy are more likely to use modern contraception and have a higher survival rate of their young children. More specifically, we believe that women who are in favor of women having some control over decisions that affect their lives, as well as women who do have control over such decisions, are more likely to adopt modern contraception and less likely to experience child mortality. There are two main arguments supporting such an expectation: one concerns the empowerment of women and another follows from the correlates of autonomy.

Where women are empowered to make vital decisions concerning their lives and circumstances they are, by definition, in a better position to take care of their own interests. When decisions are being made by men for women, women's interests may be totally ignored or they may not be given the same weight as those of men. To the extent that the net costs (the benefits minus the costs) of demographic events such as the birth of another child or the death of an infant are different for men and women (Caldwell, 1979, 1986; Ware, 1981) it will matter whether women's interests are fully represented or not when vital decisions are being made.

Further, the effective prevention of pregnancy and child mortality needs innovative action in an environment such as that of Egypt where both fertility and infant mortality are relatively high. Women have the responsibility of bearing children and looking after their health and welfare. Not allowing them control over decisions that directly and indirectly bear on this role is likely to limit their options and hinder them from taking actions they deem more appropriate. Thus, we expect that autonomous women, who are used to the responsibility of making and carrying out decisions regarding the welfare of their children and households, will also be more likely to have the capability of taking innovative action than women who have no direct control over their lives (Knodel et al., 1990; Dyson and Moore, 1983).

Women who are more educated, who have some financial independence, and who live in households in which kinship structures promote gender equality are likely to be the ones who are also more autonomous (Mason, 1987; Dyson and Moore, 1983). Higher education and work outside the home have the two-pronged effect of raising the opportunity cost of the time spent having and rearing children (Standing, 1983), on the one hand, and of increasing awareness and exposure to new ways of thinking and doing things on the other (Lerner, 1958; Inkeles and Smith, 1974; Levine et al., 1987). In addition, the aspiration structure that affects the demand for children (Mason and Palan, 1981) is also likely to be altered in more educated households: raising the quality of children (in terms of health and education) is likely to be emphasized in favor of increasing the quantity of children. Kinship systems that generate greater gender equality have been found to be associated with lower infant mortality and fertility (Dyson and Moore, 1983).

Thus, women who are more autonomous are not only more likely to have the power and the freedom to take innovative action, but also, we believe, are more capable of taking such action. Further, the opportunity cost of having another child or having a child who then dies is likely to be higher for autonomous women since they are also likely to be the ones who are educated and working outside the home. Together these arguments imply that greater autonomy of women should be associated with lower child mortality and higher contraceptive use.

3.1 Autonomy Indices and the Use of Contraception

In order to determine whether there is an association between contraceptive use and the autonomy of women we examine two sets of statistics for each of the three indices: the mean autonomy by contraceptive use and the percent of women using modern contraception at each value of the index. This allows us to determine not only how a woman using contraception differs in autonomy, on average, from one who is not currently using contraception, but also whether women at higher levels of autonomy are more likely to be using modern contraception than those at lower levels of autonomy. This two-pronged approach is especially justified given the non-normal distributions of the indices of noncustomary autonomy and customary autonomy noted earlier.

Examining the autonomy level by contraceptive use in Table 3.1, we find that the mean autonomy index value for each of the three indices is always greater among women using modern contraception than among those using no contraception at all. The difference in autonomy between users of modern contraception and nonusers is greatest when autonomy is measured by the noncustomary autonomy index. On average, women using modern contraception have a noncustomary autonomy index value 34% higher than those using no contraception. The corresponding differences when autonomy is measured by the customary autonomy index and by the realized autonomy index are 24% and 22%, respectively. These differences are all statistically significant.

The higher mean autonomy of women using contraception persists even when controlling for the number of children ever born (i.e., reading down the columns in the main body of Table 3.1). At each parity, and for all three indices, women using contraception have a significantly higher mean autonomy level (the z-scores are significant at a probability of .01 or less) than women not using contraception. In passing, it is worth noting that at higher parities, the mean autonomy of women using traditional methods of contraception is consistently higher than that of women using modern contraceptives for all three indices. A possible explanation for this result is that women using traditional contraceptives may be those that live in a cultural milieu in which contraception is not acceptable and modern contraception is totally ruled out. Under these circumstances, to use any method at all would be innovative and associated with much higher levels of autonomy. However, not only does such speculation need a multivariate analysis to verify, but the result we are explaining may itself be an artifact of the small sample sizes involved. Women using traditional contraceptives are only 2% of all women and 6% of those using any contraceptives.

Figure 3.1 reveals that the higher the index of autonomy, the higher the percent share of women using modern contraception. Women scoring the maximum value on either the customary autonomy index or the noncustomary autonomy index are twice as likely to be using modern contraceptives than women scoring 0 on either of the two indices. The difference in the proportion using modern contraceptives among women at the two ends of the realized autonomy scale is even greater: women scoring 4 are two and a half times more likely to be using modern contraception than women scoring 0.

Table 3.1 Mean values of customary autonomy, noncustomary autonomy, and realized autonomy by contraceptive method and number of children

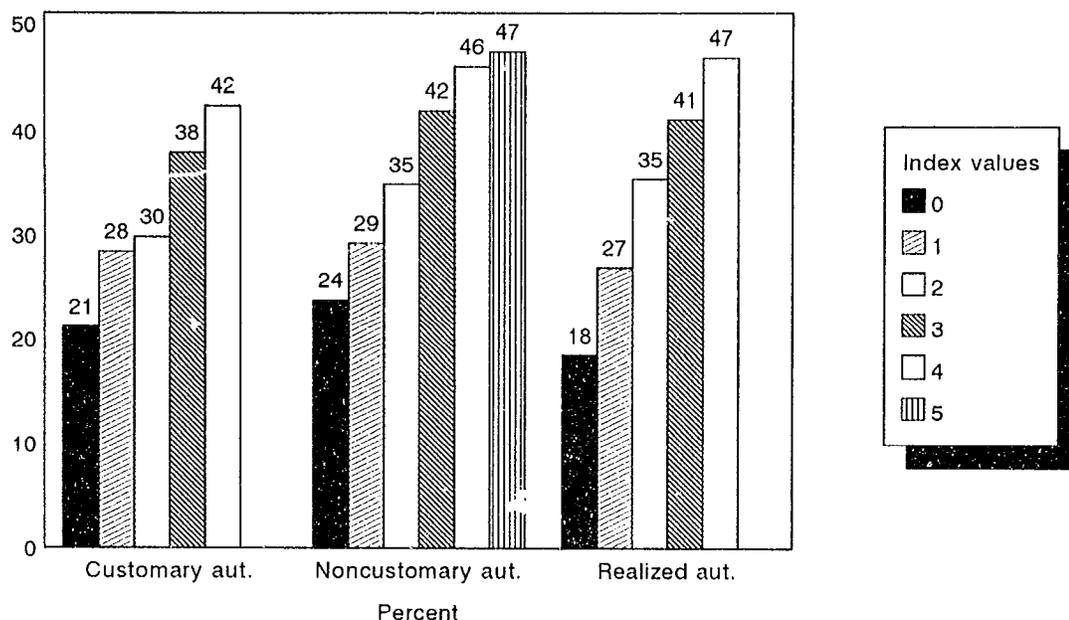
Contraceptive method	Children ever born						Number	Total mean
	0	1	2	3	4	5+		
MEAN VALUES OF THE INDEX OF CUSTOMARY AUTONOMY								
No method	2.94	2.80	2.69	2.44	2.50	2.16	5085	2.50
Traditional	-	3.13	3.53	3.39	3.34	2.93	195	3.22
Modern	4.00 ^a	3.43	3.46	3.28	3.15	2.80	2935	3.11
$Z_{(M_m-M_{nm})}$ ^b	1.36	5.32*	9.03*	9.54*	6.70*	10.40*		16.62*
MEAN VALUES OF THE INDEX OF NONCUSTOMARY AUTONOMY								
No method	2.18	2.18	2.09	2.02	1.86	1.70	5087	1.94
Traditional	-	2.67	2.75	3.14	3.06	2.60	195	2.82
Modern	4.25 ^a	3.09	3.08	2.86	2.66	2.14	2935	2.60
$Z_{(M_m-M_{nm})}$ ^b	2.44*	7.23*	10.51*	8.62*	7.71*	7.48*		17.36*
MEAN VALUES OF THE INDEX OF REALIZED AUTONOMY								
No method	2.31	2.33	2.26	2.10	2.06	1.78	5087	2.06
Traditional	-	2.53	2.56	2.75	2.86	2.30	195	2.55
Modern	3.50 ^a	2.81	2.84	2.68	2.52	2.23	2935	2.51
$Z_{(M_m-M_{nm})}$ ^b	1.92	5.27*	8.71*	8.63*	6.21*	10.56*		16.48*
N	751	917	1225	1212	1040	3072	8217	2.24

^aOnly 4 cases

^b M_m is the mean for women using modern contraceptive methods, M_{nm} is the mean for women not using any contraceptive method and $Z_{(M_m-M_{nm})} = (M_m - M_{nm}) / \sigma_{(M_m - M_{nm})}$

*Significant at $p \leq 0.01$

Figure 3.1
Percent of women using modern contraception* at
each value of the three autonomy indices



Note: Women using modern contraceptives comprise 36% of all currently married women.

Thus the evidence suggests a positive bivariate association between the use of modern contraceptives by women and all three measures of autonomy. Although customary autonomy appears to have the weakest association with modern contraceptive use, no one index emerges as having the strongest association with it. The difference in mean autonomy between users of modern contraception and nonusers is greatest when autonomy is measured by the noncustomary autonomy index. Also, those who have the highest score on noncustomary autonomy are the ones most likely to be using modern contraceptives. However, the difference in percent using modern contraception between women with the lowest scores and those with the highest scores is greatest for the realized autonomy index.

3.2 Autonomy Indices and Numbers of Children Dead by Age 5

As a first step to determine whether the mortality of young children and the autonomy level of their mothers are correlated, women were categorized according to their net parity and the number of their children who had died between the ages of 0 and 5. The net parity of each woman is the number of children ever born to her *minus* the number of her currently surviving children between the ages of 0 and 5. Net parity rather than number of children ever born is used as the control variable in order to eliminate the bias due to censoring of the mortality experience of children who have not yet completed 5 years of age. Two separate measures within each net-parity-by-number-of-children-dead category for all autonomy indices were then calculated: the mean autonomy level of women in each category and the percent of women in each category that had the highest levels of autonomy. The results are given in Tables 3.2 and 3.3.

Looking across the rows of Table 3.2 we find that at each net parity, women who have no children dead have a higher mean autonomy level than women who have one or more children dead. Also, when autonomy is being measured by the customary autonomy index and the noncustomary autonomy index, the mean autonomy level of women with 0 children dead is always greater than the mean autonomy level

Table 3.2 Mean levels of the indices of customary, noncustomary, and realized autonomy by number of children dead and number of children ever born who are not currently between the ages of 0 and 5

Net parity ^a	Number of children dead between the ages of 0 and 5						$Z_{(M_0-M_x)}$ ^b	Number
	0	1	2	3	4	5+		
MEAN VALUES OF THE INDEX OF CUSTOMARY AUTONOMY								
0	2.93						-	2535
1	2.93	2.34					5.04*	887
2	2.96	2.39	1.83				5.76*	946
3	3.09	2.66	2.13	2.14			3.08*	897
4	2.98	2.55	2.57	2.45	-		2.11*	777
5+	2.68	2.62	2.30	2.18	2.02	1.85	5.35*	2172
MEAN VALUES OF THE INDEX OF NONCUSTOMARY AUTONOMY								
0	2.32						-	2535
1	2.38	1.62					6.30*	887
2	2.56	1.83	1.26				5.99*	947
3	2.60	2.24	1.39	1.41			3.19*	897
4	2.44	2.00	2.06	1.58	-		3.11*	777
5+	2.09	2.09	1.85	1.68	1.76	1.61	3.06*	2174
MEAN VALUES OF THE INDEX OF REALIZED AUTONOMY								
0	2.39						-	2535
1	2.42	2.05					4.10*	887
2	2.54	2.01	1.72				5.64*	947
3	2.42	2.07	1.77	2.09			1.31	897
4	2.30	2.12	1.86	2.03	-		1.35	777
5+	2.10	2.09	1.94	1.87	1.69	1.66	3.88*	2174
N	5334	1531	700	357	153	142	-	8217

^a See text for definition.

^b M_0 is the mean when number of children dead is 0, and M_x is the mean when number of children dead is the maximum possible for that parity and $Z_{(M_0-M_x)} = (M_0 - M_x) / \sigma_{(M_0-M_x)}$

*Significant at $p \leq 0.01$

of women with the maximum number of children dead that is possible at each net parity. The difference in means of these two categories of women is also statistically significant (eighth column). In the case of the realized autonomy index, the difference in the mean autonomy of women with 0 children dead and those with the maximum possible dead at each parity is also positive and significant, but only for women who had a net parity of less than 3 or more than 4. For women with net parity 3 or 4, there is no significant difference in realized autonomy among women with no children dead and those with 3 children dead. (Note that there were no women in the sample with a net parity of 4 with 4 children dead between ages 0 and 5.)

Interestingly, the difference in mean autonomy of women with 0 children dead and those with the maximum number possible dead is greatest for women at parity two for each of the three indices. Women with a net parity of 2 who have 0 children dead have a mean customary autonomy index value 38% higher, a mean noncustomary autonomy index value 51% higher, and a mean realized autonomy index value 32% higher than women who have both children dead. This difference is greatest at all other parities for autonomy measured by the noncustomary autonomy index and least for autonomy measured by the realized autonomy index.

Similarly, looking across the rows of Table 3.3 we find that the share of women scoring the highest possible scores on each index is higher among women who have no children dead than those who have experienced at least one child death. Further, if we measure the difference in likelihood of being in the highest autonomy group among women with zero children dead and women with the maximum number of children dead possible at each net parity, the difference is greatest for autonomy measured by the noncustomary autonomy index. Thus, although child survival appears to be associated with autonomy as measured by all three indices, the analysis suggests that it is especially sensitive to noncustomary autonomy.

We conclude that both contraceptive use by women and the relative survival of children are positively associated with the level of autonomy of women. Women using modern contraception and experiencing no child deaths are likely, on average, to have a higher autonomy score on all dimensions of autonomy than those who use no contraception and do experience child deaths. Although not conclusive, this analysis further suggests that the different aspects of autonomy do not have an equal and identical association with demographic outcomes. Believing that women should have autonomy in matters not related specifically to children (noncustomary autonomy) is more consistently and positively associated with desired demographic behavior than are the other two dimensions of autonomy.

Table 3.3 Percent of women who have the highest scores on customary autonomy, noncustomary autonomy, and realized autonomy by the number of children dead, at each net parity level

Net parity ^a	Number of children dead between the ages of 0 and 5						Ratio of col. 2 and col. x ^b
	0	1	2	3	4	5+	
PERCENT OF WOMEN WHO SCORE 4 ON INDEX OF CUSTOMARY AUTONOMY							
0	60.99						-
1	60.03	47.96					1.25
2	60.20	45.56	26.15				2.30
3	63.08	51.53	32.79	45.45			1.39
4	58.13	47.56	45.35	50.00	-		1.16
5+	51.13	47.78	40.45	43.77	33.99	30.28	1.69
PERCENT OF WOMEN WHO SCORE 4 OR 5 ON INDEX OF NONCUSTOMARY AUTONOMY							
0	28.48						-
1	30.90	13.75					2.25
2	35.47	21.11	12.31				2.88
3	35.55	30.13	11.48	18.19			1.95
4	30.71	22.35	19.77	13.16	-		2.33
5+	24.02	23.06	17.83	14.81	16.34	16.20	1.48
PERCENT OF WOMEN WHO SCORE 3 OR 4 ON INDEX OF REALIZED AUTONOMY							
0	49.51						-
1	50.00	37.17					1.35
2	55.41	36.67	24.62				2.25
3	49.92	38.43	26.23	45.46			1.10
4	45.95	40.65	22.09	42.10	-		1.09
5+	39.84	38.55	33.20	30.64	22.23	26.06	1.53

^aSee text for definition

^bAt each net parity column 2 is the column corresponding to 0 children dead and column x is the column for the maximum possible number of children dead.

- Indicates no cases

Chapter 4

Explaining Female Autonomy: Developing Hypotheses

Women, like men, are members of several multilevel groupings that constitute society. They are members of regional clusters with associated socioeconomic levels of development and laws, of cultural and religious groups with associated kinship arrangements and accepted norms of behavior, and of households and conjugal units each with its own specific characteristics. And women are also individuals imbued with their own distinctive characteristics. The degree of autonomy desired and exercised by women depends not only on their own characteristics, but is also influenced by the characteristics, practices, and norms of each of the specific groupings of which they are members. It is this intersection of women's multilevel involvement in society with the multilevel influences on their autonomy that needs to be modelled for the specific case of Egyptian women. Specifically, we need to explain the cross-sectional variation in the autonomy of currently married Egyptian women as defined by the indices of customary autonomy, noncustomary autonomy, and realized autonomy.

The EDHS allows us to incorporate into our discussion women's simultaneous membership at the household level,¹ the conjugal unit level, and the individual level. We also know their religious affiliation and their regional membership based on the location of the household to which they belong. We are able to examine two sources of influence on women's autonomy: the modernizing and economic influences on the one hand, and the culture-specific influences embodied in the kinship arrangements to which women are subject, on the other. These influences are assumed to impact directly on each woman through her own characteristics, as well as indirectly through the characteristics of the household of which she is a member and the characteristics of her husband who is the other member of her conjugal unit. Following from the above we divide our discussion into two parts. First, we develop hypotheses pertaining to the modernizing and economic explanations of female autonomy, and then we develop hypotheses that take cultural influences into consideration.

4.1 The Modernization Approach to the Autonomy of Women

The modernization theory of development argues that in the process of modernization, traditional barriers to mobility and self expression break down, giving way to new ways of thinking and doing things (Kuznetz, 1966; Inkeles and Smith, 1974). The traditional emphasis on the maximization of group welfare is replaced by a new emphasis on self-determination and the achievement of individual-level goals (Moore, 1979). Urbanization, the spread of education, and increased exposure to mass media create the need for and facilitate innovative behavior that emphasizes autonomy in thought and action (Lerner, 1958; Moore, 1979).

Since the modernization theory of development does not differentiate between sexes, the underlying assumption appears to be that innovative behavior and the move to individual-level autonomy are not gender specific. The erosion of traditional norms should free both women and men to take control of their own destiny and behave autonomously to maximize their welfare. The modernization process is thus assumed to be one that generates, in all, a need and a capacity for autonomy and self-determination. The processes of industrialization and urbanization, the spread of literacy and communications, as well as widespread exposure

¹A woman could be a member of a household as household head. However, in Egypt female-headed households account for about only 4% of households (Nawar et al., 1994) and only 0.3% of currently married women in the EDHS are household heads. Household headship is potentially an important influence on autonomy. However, because of the statistical insignificance of female-headed households in Egypt, it is not discussed.

to the media have all been identified as vehicles of modernization. The economic development of the region in which the household is located and the socioeconomic status of the household are likely to mediate the extent to which individual members have access to modern education and thought.

These arguments imply that female autonomy is an innovative response to, as well as a consequence of, the processes of modernization and economic development. Thus, we should expect the following:

4.1.1 Area of Residence

Women residing in households located in urbanized, economically developed regions will be more autonomous than women residing in less developed, rural regions.² In the case of Egypt this implies that women in the more developed Lower Egypt should have more autonomy than women in the less developed Upper Egypt, and those in the Urban Governorates and in the urban regions of Lower and Upper Egypt should be more autonomous than those living in rural Upper and Lower Egypt.

4.1.2 Socioeconomic Status of the Household

The higher the socioeconomic status of the household the greater is its potential ability to provide education and media-exposure to its members. The modernization approach equates this potential to the desire to do so. However, increased wealth and socioeconomic status can also enhance the ability of households to fulfill gender norms. If these norms are patriarchal, households may opt not to eliminate gender inequality, but, instead, to increase controls over women and curtail their autonomy. One example of such a response to increases in household socioeconomic status is the withdrawal of female members from the labor force as the wealth of the household increases (Agarwal, 1986).

However, data specific to Egypt suggest that female autonomy, at least as measured by questions on the necessity of the husband's permission, knowledge about women's rights, and association memberships, is positively associated with standard of living (Nawar et al., 1994). Consequently, we hypothesize that controlling for cultural influences on autonomy (discussed below) the socioeconomic status of the household will be positively associated with female autonomy.

4.1.3 Husband's Characteristics

Since a woman is also a member of a conjugal unit, a woman's autonomy can be expected to be affected by the extent of her husband's exposure to modernizing influences. Specifically, the higher the education level of the husband and the greater his involvement in the modern production sector, the greater will be his wife's autonomy.

4.1.4 Individual-level Characteristics

Modernizing influences will affect a woman's autonomy also because they will be embodied in her own education, her employment experience, and her past and present exposure. Past exposure to modernizing influences is important since role socialization generally begins in the formative years. We expect that women who are more highly educated and have had early and continuing exposure to the world outside the home are likely to be more autonomous.

²Egypt is divided into four major regions: Lower Egypt, Upper Egypt, the Urban Governorates, which include the four urban centers of Cairo, Alexandria, Suez and Port Said, and the Frontier Governorates. Lower Egypt accounts for about 43% of the population, Upper Egypt for about 35%, the Urban Governorates for about 20%, and the Frontier Governorates for about 1%. Data are not available in the 1988 EDHS for the Frontier Governorates.

Modernization theory also implies that female labor force participation should translate into greater control over household resources. However, this relationship is likely to be mediated, on the one hand, by a woman's control over her own earnings (Greenhalgh, 1985; Bardhan, 1985; Safilios-Rothschild, 1982), and on the other, by the respect given to a woman who is employed.

In Egypt even a broad measure of labor force participation shows only a maximum of 20% of currently married women of reproductive age as working (Nawar et al., 1994). Women who do work often justify their labor force participation in terms of the economic necessity of helping the family financially (Nawar et al., 1994; Rugh, 1984). This suggests that working outside the home may be more acceptable if it is seen as fulfilling the financial needs of the family.

To the extent that labor force participation is a means to fulfill family economic needs women who work and give their earnings for family use should be accorded a higher status within the home or community than those who earn but keep most of the earnings for themselves. And yet, modernization theory would predict that it is women who are able to dispose of their earnings by themselves are likely to have the greatest autonomy, and women whose labor and earnings are entirely in someone else's control are least likely to gain in autonomy from labor force participation.

Aside from the issue of control over earnings, labor force involvement is likely to enhance a woman's need for autonomy as well as expose her to ideas that emphasize women's autonomy. Indeed, research in some Cairo communities suggests that women who brought in wages were allowed a greater say in financial matters (Hoodfar, 1988). Thus, we hypothesize that working for cash will be positively associated with autonomy; additionally, working women with control over earnings will be more autonomous than those with little control over earnings.

What of women who are employed but do not receive any cash for their work? We are unaware of any research specifically addressing the autonomy of such women. Clearly such work, being unrelated to earnings, is unlikely to directly enhance women's financial autonomy or directly improve the financial welfare of the household. Nevertheless, work paid for in kind (e.g., paid for with food) might help the household by freeing cash resources for alternative uses. Further, even work without cash earnings is likely to require greater freedom of movement for women and should increase their exposure to the world outside the home. Thus, we hypothesize that women working but not earning cash will be less autonomous than women working for earnings, but more so than women not working at all.

Women's exposure to modernization will also be affected by their migration history. Living in many places as distinct from living in only one place will increase the probability of exposure to different belief systems and alternative ways of doing things. In addition, the process of migration involves a break with familiar surroundings and the ability to survive in unfamiliar ones. This suggests that migratory women more than nonmigratory women will need to be more open to change and more resourceful. These characteristics, in turn, are likely to be positively associated with autonomy.

4.2 Culture-dependent Influences on Female Autonomy

The autonomy implied by economic development and modernization theories is likely to be mediated by the kinship structures within which women live and the culture-specific gender and age-stratification systems of which they are a part. Indeed, the degree of women's exposure to modern ideas, their freedom of movement outside the home, their access to modern education, and their involvement in the economic production process will all be guided to a lesser or greater extent by what is considered socially and culturally appropriate for women.

In most predominantly patriarchal societies that emphasize women's dependence on male kin, culturally appropriate behavior for women is not likely to encourage expressions of autonomy of either decision-making or action. Indeed, Dixon-Mueller (1993) describes the "essence" of patriarchy as a system in which "girls and women have little control over the circumstances under which they work, the returns for their labor, their sexuality, and the timing and number of their children" (pg. 25). However, the extent to which the normative assumptions about appropriate female behavior are adhered to are likely to depend on several aspects of the kinship structure, and on how these aspects impinge on women's individual circumstances. Of particular interest are factors that embody patriarchal controls: post-marital residential arrangements, marriage rules, and the roles of female fertility and having sons in woman's status attainment and autonomy. Let us examine each of these factors and hypothesize about its association with female autonomy.

4.2.1 Post-marital residential arrangements

There are two aspects of post-marital residential arrangements that we consider: the nature of the household, i.e., whether it is nuclear or not, and whether the husband's relatives or the wife's relatives are co-resident with the couple.

Women in extended families are likely to be less autonomous than women in nuclear households. There are two arguments favoring this association. First, the two types of households are likely to afford different opportunities for the expression of individual-level autonomy. Extended family living affords a greater opportunity for control of women by others, especially control of new brides and young women who are at the bottom of the gender and age hierarchy (Dixon-Mueller, 1989). Since some of these "others" are likely to be senior women, it is clear that control within the family will be affected not only by gender, but also by age: women being afforded less autonomy than men, and younger women having less power than older women. Similarly, even younger men are afforded less autonomy than older men. By contrast, in a nuclear family the decision-making is much more likely to rest in the hands of the male head, and the next in line is much more likely to be his wife

Second, reversing the causality, we would expect women and couples who are more autonomous to self-select into forming nuclear households (Caldwell et al., 1988). In other words, women who are more autonomous are less likely to be living in extended or joint families precisely because their autonomy prevents them from living harmoniously in such families. Thus, at any point in time, we would expect a higher proportion of autonomous women living in nuclear households than in non-nuclear ones. This suggestion is borne out in part by data that show that married Egyptian women in nuclear households are much less likely to be illiterate, and much more likely to have had self-arranged marriages than married women living in extended families (Nawar et al., 1994). Thus, on both counts, we hypothesize that women in extended families are more likely than those in nuclear families to be autonomous.

Even if women are not living in extended households, intergenerational obligations often imply that aging parents live with their married children. Patriarchal kinship structures emphasize the intergenerational responsibilities of males to their natal kin rather than those of females (Dyson and Moore, 1983). While this implies that the husband's parents are more likely than the woman's kin to reside with the conjugal couple, it also means that in households that contain a woman's in-laws, patriarchal traditions are more likely to be enforced. Further, it is more likely that a woman in such a household is in a more subordinate position than a woman in a household in which her own parents are co-resident or in which there is no kin co-resident. We can therefore expect women living in households with in-laws present to be less autonomous than those living in households with no kin or their own kin present.

4.2.2 Marriage

Marriage arrangements can affect a woman's autonomy because they impact on who she marries, the age at which she marries, and the ease with which she can dissolve her marriage or get remarried. Whereas the first of these factors affects her conjugal-level membership, the others will enhance or reduce her autonomy through her individual-level characteristics.

Marriage to a relative, a fairly common practice in Egypt, has been associated with a lower status for women in Muslim countries (Moghadam, 1992). In Egypt being married to a relative is positively correlated with being married very young, being illiterate, and being married to a person selected by others (Nawar et al., 1994). These findings lead us to expect that women who are married to kin will be less autonomous than women not married to kin.

A higher age at marriage and autonomy have been found to be positively correlated (Safilios-Rothschild, 1985), with causality running both ways (Mason, 1987; Standing, 1983; Cochrane, 1983; Smith, 1983). Consequently, we would expect that age at marriage would be positively associated with a woman's autonomy.

Rates of divorce have been found to be higher where women have access to, and control over, resources (Ackerman, 1964; Hull, 1977; Havens, 1973). Nevertheless, United Nations data reveal that countries with more egalitarian gender systems that accord equal rights of divorce to men and women can have rates of divorce similar to countries that have extremely inegalitarian gender systems that make it easier for men than women to divorce (United Nations, 1984). Consequently, it cannot be assumed that a high rate of divorce reflects a higher level of female autonomy; a high rate of divorce can also result from women's subordinate legal and social position so that a woman can be easily divorced.

In Egypt, recourse to divorce appears to differ by gender, so that it is easier for men than women to divorce (Naguib, 1994). In most cases, men do not need to petition a court, but can obtain a divorce simply by repudiating their wives three times. Women, on the other hand, must expend a large amount of time and money and go through a court.

The data we have in the EDHS are not on divorce, but on whether women have been remarried. Keeping in mind that remarriage can occur following a divorce or widowhood, what can be said about the relative autonomy of remarried women? Our discussion does not suggest a direct association between being divorced and the autonomy of a woman in Egypt. Nonetheless, we expect that a woman who has experienced the dissolution of a marriage (for whatever reason), and has entered into another, is more likely to require and display greater control over her life than a woman who has not had this experience.

4.2.3 Number of children and son preference

At the macro level, regions of low female autonomy are also regions where fertility is high (Dyson and Moore, 1983). One explanation of this is that for a woman living in a patriarchal household, children, especially sons, are likely to help secure her position in her husband's home and improve her status (Blake, 1965; Wolf, 1972; Dixon, 1975; Caldwell, 1986). However, this explanation also implies that women who are more autonomous initially, or those whose circumstances allow them to be more autonomous, are less likely to need children or sons as props to their status.

Even when children are needed to acquire status, it is not clear whether a greater *number* of children will enhance autonomy more than a lesser number. Also, although the literature has emphasized the

importance of sons, we do not know whether a larger number of daughters will leave a woman's autonomy unaffected or reduce it.

In Egypt, the cultural tradition does stress the importance of male children, but this emphasis translates into only a moderate level of son preference (Cleland et al., 1983). Women in Egypt appear not to be as completely devoid of other sources of status or security as women in some South Asian regions where patrilocal village exogamy leaves married women isolated among strangers. In these regions, the practice of exogamy has been found to be associated with extreme son preference (Kishor, 1992a, 1992b). Indeed, ethnographic and empirical data reveal that women in Egypt tend to live near their families of origin, often receive some personal property at marriage and compensation in case of divorce, and can accept help from a daughter as a last resort (Makinson, 1986, 1987). These factors, combined with the fact that autonomous women are also the ones who are less likely to need a large number of children as security, yield the following hypothesis: The number of sons will be positively, though moderately, related to female autonomy, and the number of daughters will be unrelated to autonomy.

The hypotheses developed so far have not specifically differentiated between the impact of modernization and cultural influences on the different aspects of autonomy. In addition to the over-all effect of these factors, we are interested in the relative difference in their impact on the three different dimensions of autonomy as measured by the indices of customary autonomy, noncustomary autonomy and realized autonomy. We have noted that high scores on the customary autonomy index are typical among Egyptian women but are the exception on the noncustomary autonomy index. This suggests that the belief that women should influence decision-making in the domestic sphere is more likely to be the norm, and the belief that women should have influence in decision-making in the non-domestic sphere is more likely to be reflective of innovative thinking. If this is the case, we can expect that the model of autonomy we have developed will better explain variations in noncustomary autonomy than in customary autonomy. Note, however, that the stronger normative basis of customary autonomy also implies that variation in levels of the customary autonomy index should be observed across groups between which the norm itself differs.

The impact of modernizing influences and kinship structures is likely to also differ between the indices that reflect women's opinions about women's decision-making roles, on the one hand, and realized autonomy, on the other. For one, realized autonomy is likely to be more influenced by practical considerations: for example, a woman who works outside the home is likely to need and get more freedom of movement not necessarily because she may desire it more, but because working outside the home requires her to have it. Further, the realized autonomy of women is the most visible form of all the forms of autonomy being considered. In patriarchal societies the status of the entire household can rest on the behavior of women. Thus, kinship structures are likely to reinforce traditional norms about behavior. Consequently, the transformation of exposure to modernizing influences into "modern" behavior by the individual woman may also be more difficult under patriarchal kinship arrangements. Thus, we expect kinship arrangements to play a greater role, and individual-level factors to play a lesser role, in explaining variation in realized autonomy as compared with the other dimensions of autonomy, especially noncustomary autonomy.

Chapter 5

Explaining Female Autonomy: The Case of Egypt

As already mentioned, the data used to test these hypotheses are taken from the 1988 EDHS. Along with information on women's autonomy, the EDHS also contains information on each woman's socioeconomic and cultural background, some information on her husband, her migration experience, and on other individual-level and household-level characteristics. In Section 5.1 we describe the dependent and independent indicators used in the analysis, in Section 5.2 the methodology used, and in Section 5.3 the results of the empirical analysis. The means and standard deviations for all indicators are given in Table 5.1. The correlations can be found in Appendix 1. Note that due to missing data on several of the variables, the summary statistics and the multivariate analyses are based on only 7,717 women, which represents 94% of the available unweighted sample of currently married women.

5.1 Description of Variables

5.1.1 Dependent variables

The dependent variables for the multivariate analysis are the three autonomy indices, i.e., customary autonomy, noncustomary autonomy, and realized autonomy. For ease of calculation and interpretation, each index is collapsed into three categories—low, medium, and high autonomy—which are defined separately for each index as shown below.

Note, however, that when used as independent instead of dependent variables, these autonomy indices are used in their original, uncollapsed form.

5.1.2 Independent variables

Economic and modernization variables

It has been hypothesized earlier that relative to other women, women who live in the urbanized and developed regions of the country and in wealthier households, who have more education, who are employed for cash, who have greater exposure to nontraditional ways of thinking and doing things, who have educated husbands, and whose husbands are professionals or are involved in modern industry or modern services, are likely to have higher autonomy.

Autonomy category	Scores on index of:		
	Customary autonomy	Non-customary autonomy	Realized autonomy
Low	0 and 1	0 and 1	0 and 1
Medium	2 and 3	2 and 3	2
High	4	4 and 5	3 and 4

In order to capture the impact of living in urbanized and more developed regions on autonomy, dummies have been defined for the five major regions-cum-residence areas of the country: the Urban Governorates, urban Lower and urban Upper Egypt, and rural Lower and rural Upper Egypt. Although the sample of women is almost equally divided between urban and rural areas, about half of those who live in urban areas, live in the Urban Governorates. Early exposure to modernizing influences is included in the form of a dummy for area of residence (rural or urban) before the age of 12. Migration history is measured indirectly by the proportion of a woman's life spent in the place of interview. The respondent's education is measured by her number of years of schooling, and her husband's education level is measured by his number of years of schooling. On average, women in the sample had 4 years of schooling and their husbands

Table 5.1 Means and standard deviations for all variables included in the analysis of women's autonomy in Egypt

Variables	Means	Standard deviation
<u>DEPENDENT VARIABLES</u>		
Index of customary autonomy (range 0-4)	2.72	1.61
Index of noncustomary autonomy (range 0-5)	2.18	1.67
Index of realized autonomy (range 0-4)	2.23	1.19
<u>EXPLANATORY VARIABLES</u>		
<u>MODERNIZATION VARIABLES</u>		
<u>Household characteristics</u>		
Region dummies:		
Urban Governorates	0.26	-
Urban Lower Egypt	0.11	-
Urban Upper Egypt	0.12	-
Rural Lower Egypt	0.27	-
Rural Upper Egypt	0.24	-
Socioeconomic index (range 0-24)	8.71	6.55
<u>Individual characteristics</u>		
Years of education	3.89	5.10
Hours spent watching TV per day	2.09	2.25
Lived up to age 12 in rural area	0.57	-
Proportion of life spent in place of interview	0.77	0.33
<u>Own employment</u>		
Currently employed for cash and earnings	0.12	-
At least half for self	0.03	-
More than half to family	0.09	-
Currently employed not for cash	0.08	-
Currently not employed	0.80	-
<u>Husband's characteristics</u>		
Husband's years of education	5.72	5.60
Husband's profession dummies:		
Professional, managerial, technical, and clerical	0.17	-
Sales and service	0.24	-
Skilled and unskilled production	0.27	-
Agriculture	0.28	-
None or don't know	0.04	-
<u>CULTURAL VARIABLES</u>		
<u>Household characteristics</u>		
Household size	7.07	3.77
Co-residence dummies:		
Husband's relatives living in household	0.27	-
Own relatives living in household	0.02	-
No relatives living in household	0.71	-
<u>Individual characteristics</u>		
Age	32.17	8.41
Respondent is Muslim	0.93	-
<u>Marriage and children</u>		
Age at first marriage	18.17	4.17
Married more than once	0.05	-
Husband is first cousin	0.27	-
Number of sons	2.09	1.76
Number of daughters	1.96	1.73

had 6 years. A woman's current exposure to the media is measured by the number of hours per day spent watching television. The husband's profession is also captured in terms of dummies. Agriculture and manual production (skilled and unskilled) are the major occupations among husbands, followed by sales and service occupations. Barely 17% of husbands are professionals or in clerical occupations. The reference category in the analysis is women whose husbands are in agricultural occupations. Note that this category also includes a negligible number of women (0.04%) whose husbands had unknown occupations.

No household income data are available in the EDHS. Instead, socioeconomic status is measured by an index based on the number of consumer durables owned by the household and the household's toilet facilities. This index is multiplicative and ranges from 0 for households that had no, or very primitive, toilet facilities, and none of eight possible durable consumer goods,¹ to 24 for households that had modern toilet facilities and all eight durable consumer goods.

In light of previous discussion about the necessity to distinguish between types of employment and the degree of control over earnings, women's current employment status² is captured by four dummy variables: employed for cash with control over earnings, employed for cash with little control over earnings, employed, but not for cash, and not employed. A woman is assumed to control earnings when she keeps at least half of her earnings for herself; she is assumed to have little control over earnings when she gives most of her earnings to her family. Only about two in ten women were currently employed: 3% worked for cash and had control over their earnings, 9% worked for cash with little control over earnings, and 8% were employed, but not for cash. Given the extremely small numbers of women that were employed, and the even smaller numbers in each professional category, it was not possible to include information on women's professions in the model.

Cultural variables

The autonomy of women is likely to be related to factors that are at least in part culture specific, and others that are important because kinship structures make them so. Among these factors are age of the respondent, religion of the respondent, marriage patterns, postmarital residential arrangements, and number of children by gender.

While age of the woman is measured directly, a dummy is included for religion (Muslim=1). Women in the sample are on average 32 years, and nine out of ten are Muslim.

Three indicators of marriage arrangements are included: the age at first marriage, whether the respondent is married more than once, and whether she is married to a first cousin. On average women first married at the age of 18, 27% are married to a first cousin, and one in twenty have been married more than once. Since this sample contains only currently married women, currently divorced or widowed women who are not currently married are excluded.

Postmarital residential arrangements are measured by whether the respondent's household includes her own relatives, her husband's relatives, or no relatives. The majority of women did not have co-resident relatives. However, in keeping with patriarchal tradition, 27% did have husband's relatives living with them, but only 2% had their own relatives living with them.

¹The durable goods included were refrigerators, cars, televisions, videos, cassette recorders, electric fans, gas/electric cooking stoves, and washing machines.

²A women's premarital employment experience was originally included in the analysis, but was found to have no relationship with autonomy.

Household size is used as a proxy for type of household. The more members present in the household, the more likely it is to be an "extended household." On average the households to which the women belonged had about 7 people. Also, women on average had 4.1 children, of whom slightly less than half were daughters and a little more than half were sons.

All of the independent variables defined are hypothesized to have an effect on each of the three indices of autonomy; however, these indices are themselves moderately well correlated. Consequently, the total impact of any explanatory variable on each autonomy index of interest will potentially comprise a direct-effect component and an indirect-effect component. The indirect effect arises out of the explanatory variable's simultaneous impact on the other aspects of autonomy, which are in turn correlated with the given index. In order to understand both the direct and indirect effects of all explanatory variables, we estimate two different models for each autonomy index. In Model 1 each autonomy index is regressed on the economic, modernization, and kinship structure variables discussed above. The coefficients of this model will capture the "total effect" of each variable on the autonomy index. In Model 2 we add to Model 1 the other two autonomy indices. Doing so allows us to better isolate the direct effect of each variable on the index of interest and determine whether the impact of each explanatory variable on any given index is entirely captured and explained away by the level of the other autonomy indices. Model 2 also allows us to see how the three indices are related within a multivariate context.

5.2 Methods

The discrete and ordered form of the autonomy indices necessitates the use of Ordered Logit Regression techniques to evaluate alternative models. For a three-category dependent variable, following Greene's discussion (1993, pp. 672-6), the ordered logit model estimates a latent or unobserved variable y^* as a linear function of X , a vector of independent variables such that

$$y^* = \beta'X + \epsilon$$

where ϵ is logistically distributed. Maximum likelihood procedures are used to estimate the β 's and one other unknown parameter μ using values of the observed variable y such that

$$y = 0 \text{ if } y^* \leq 0$$

$$y = 1 \text{ if } 0 < y^* \leq \mu$$

$$y = 2 \text{ if } \mu \leq y^* .$$

The answers to questions about decision-making within the household and freedom of movement are assumed to measure different aspects of autonomy. However, in reality, all three aspects of autonomy are latent. Thus, for each autonomy index, y^* represents this unobserved measure of autonomy, whereas the actual scores on the index are values of the observed variable, y .

The estimated β 's in the ordered logit regression are not equivalent to a linear effect on the dependent variable of a marginal change in regressors. Consequently, we report the probability changes associated with the coefficients instead of the coefficients themselves. (See Appendix 2 for details.) If the regressor is continuous, the probability change can be interpreted as the percent change in probability of being in the low, medium, or high autonomy category of the dependent autonomy index due to a marginal change in the

regressor; if the regressor is a dummy variable, the probability change³ can be interpreted as the percent change in probability of being in the low, medium, or high autonomy category of the dependent autonomy index due to a change in the dummy value from 0 to 1. Tables 5.2, 5.3, and 5.4 present the results for the three autonomy indices of customary autonomy, noncustomary autonomy, and realized autonomy.

5.3 Results

5.3.1 Multivariate Analysis of Customary Autonomy

The results presented under Model 1 in Table 5.2 tell us the estimated total effects (direct plus indirect), in terms of percent change in probability, on women's level of customary autonomy of each regressor. Women in both rural and urban Upper Egypt differ significantly in terms of their level of customary autonomy from women in urban Lower Egypt (the reference region), whereas women in rural Lower Egypt or in the Urban Governorates do not. Specifically, women in rural Upper Egypt have a 55% and 16% higher probability of being in the low and middle customary autonomy groups, respectively, and a 25% lower probability of being in the highest customary autonomy group as compared with women in urban Lower Egypt. The probability differences between women in urban Upper Egypt and urban Lower Egypt are similar, though somewhat smaller in magnitude.

A higher household socioeconomic status increases the probability of having a high level of customary autonomy and lowers the probability of having a medium or low level. Each additional year of the woman's own education and that of her husband's and each additional hour of exposure to the outside world through television viewing also increase the probability of scoring high on customary autonomy and reduce the probability of scoring at the medium or low level. As should be expected, the increase in the probability of being in the high category of customary autonomy due to a one-year increase in own education is almost four times that of a one-year increase in husband's education.

Women do not differ in their level of customary autonomy by their overall migratory experience. However, women whose childhood was spent in rural areas had a significantly higher probability of scoring at a low or medium level of customary autonomy and a lower probability of scoring high than women whose childhood was spent in urban areas.

Interestingly, having a husband who is a professional or is in the clerical, sales or service sector does not distinguish women in terms of their level of customary autonomy from women whose husbands are in the agricultural sector. However, the level of customary autonomy of a woman with a husband in manual production differs significantly from women in the reference group: on average, she has an 8% higher probability of scoring high and a 12% lower probability of scoring low.

As expected, the impact of women's employment on autonomy differs by whether women are earning cash or not and the extent of control of earnings. Women who earn and keep their earnings have a 23% higher probability of having a high level of customary autonomy, and a 35% and 20% lower probability of

³Note the asymmetry between the probabilities reported for continuous and dummy variables. For continuous regressors, the percent change in probability of being in each of the low, medium, and high autonomy categories due to a marginal change in the regressor is mathematically constrained to sum to 0. For dummy regressors, it is the absolute difference in probability due to the dummy taking the value 1 instead of 0 of being in the low, medium, and high autonomy categories, which must sum to 0. The reported percent differences in probabilities reported for dummy variables are based on these absolute differences and need not add to 0.

Table 5.2 Percent change in probability calculated from ordered logit regression estimates for alternative models of the index of customary autonomy

Variables	Autonomy category	Percent change in probability of being in each customary autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
MODERNIZATION VARIABLES			
<u>Household characteristics</u>			
Region of residence: (Ref. Categ.: Urban Lower Egypt)			
Urban governorates	Low	-2.11	2.31
	Medium	-.88	1.01
	High	1.25	-1.27
Lower Egypt:Rural	Low	9.80	7.12
	Medium	3.81	3.03
	High	-5.46	-3.81
Upper Egypt:Urban	Low	30.94***	36.92***
	Medium	9.81	12.51
	High	-16.13	-17.83
Upper Egypt:Rural	Low	55.24***	46.69***
	Medium	15.93	15.91
	High	-25.32	-20.98
Socioeconomic level	Low	-.54***	-.26***
	Medium	-.21	-.14
	High	.75	.41
<u>Individual characteristics</u>			
Years of education	Low	-1.19***	-.37***
	Medium	-.47	-.21
	High	1.66	.58
Hours watching TV	Low	-.43**	.07
	Medium	-.17	.04
	High	.59	-.10
Rural childhood	Low	12.82**	4.56
	Medium	5.17	2.00
	High	-6.77	-2.44
Proportion of life spent in the place of interview	Low	.86	-1.01
	Medium	.34	-.55
	High	-1.20	1.56
<u>Own employment</u> (Ref. Categ.: Not employed)			
Employed for cash and:			
-Most earnings for self	Low	-34.64**	-28.23*
	Medium	-19.73	-15.76
	High	22.82	17.37
-At least half to family	Low	-1.23	11.69
	Medium	-.51	4.74
	High	.73	-6.23
Employed not for cash	Low	21.03***	20.04***
	Medium	7.15	7.59
	High	-11.46	-10.37

Table 5.2—cont.

Variables	Autonomy category	Percent change in probability of being in each customary autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
<u>Husband's characteristics</u>			
Years of education	Low	-.26**	.05
	Medium	-.10	.03
	High	.37	-.07
Profession: (Ref. Categ.: Agriculture, and none or don't know)			
Professional, managerial, technical, or clerical	Low	-9.34	-3.46
	Medium	-4.15	-1.57
	High	5.72	1.96
Sales and services	Low	-2.19	.16
	Medium	-.92	.07
	High	1.30	-.09
Manual Production	Low	-12.42***	-7.53
	Medium	-5.55	-3.48
	High	7.84	4.38
<u>CULTURAL VARIABLES</u>			
<u>Household characteristics</u>			
Household size	Low	.22*	-.10
	Medium	.08	-.06
	High	-.30	.16
Relatives co-resident: (Ref. Categ.: No relatives co-resident)			
Husband's relatives	Low	19.43***	6.50
	Medium	7.14	2.78
	High	-10.29	-3.49
Only wife's relatives	Low	-7.86	5.08
	Medium	-3.51	2.15
	High	4.72	-2.78
<u>Individual characteristics</u>			
Age	Low	-.23***	-.05
	Medium	-.09	-.03
	High	.32	.08
Muslim	Low	2.55	-3.89
	Medium	1.06	-1.71
	High	1.45	2.27
<u>Marriage and children</u>			
Age at first marriage	Low	.04	-.10
	Medium	.02	-.06
	High	-.06	.16
Married more than once	Low	9.62	7.17
	Medium	3.63	3.00
	High	-5.47	-3.90
Husband is a first cousin	Low	5.88	5.49
	Medium	2.34	2.36
	High	-3.34	-2.97

Table 5.2—*cont.*

Variables	Autonomy category	Percent change in probability of being in each customary autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
Number of sons born	Low	1.41***	1.21***
	Medium	.55	.66
	High	-1.96	-1.87
Number of daughters	Low	1.07***	1.04***
	Medium	.42	.57
	High	-1.49	-1.60
<u>Other autonomy indices</u>			
Realized autonomy	Low	-	-1.99***
	Medium		-1.10
	High		3.09
Non-customary autonomy	Low	-	-9.89***
	Medium		-5.44
	High		15.33
Intercept		.92***	-.26
μ		1.00	1.18
Log likelihood		-7010.91	-6342.82
Pseudo-R ²		.10	.18

^aFor dummy variables, this gives the percent increase/decrease in probability of being in each autonomy category on account of being in the dummy category coded 1 instead of the category coded 0. These probabilities do not add to 0 (See text for explanation). For continuous variables, this gives the increase/decrease in the probability of being in each autonomy category per unit change in the explanatory variable. These probabilities should add to 0 with a margin of error due to rounding.

*** = coefficient on which probabilities are based is significant at probability < 1%
 ** = coefficient on which probabilities are based is significant at probability between 1% and 5%
 * = coefficient on which probabilities are based is significant at probability between 5% and 10%

having a low or medium level of customary autonomy, respectively, than women who do not work at all (the reference category). Women who earn but do not control their earnings are no different from those who do not work. Women who are employed but do not earn cash are not more autonomous than women who do not work at all. Indeed, as compared with nonworking women, women who work but do not earn cash have a 21% higher probability of being in the low category of customary autonomy and an 11% lower probability of being in the high category. These results imply that if women work but do not earn cash for their work they are even more disadvantaged in terms of their level of customary autonomy than if they were not working at all.

Few of the cultural variables significantly affect the level of customary autonomy. However, women whose husband's relatives are co-resident have a 10% lower probability of having a high level of customary autonomy and almost a 20% higher probability of having a low level compared to women who have no

relatives co-resident. The presence of own relatives does not distinguish women from the reference group in terms of their customary autonomy.

As hypothesized, older women tend to have greater autonomy than younger women. However, contrary to expectations, a greater number of sons and daughters is associated with a significantly lower probability of scoring high on customary autonomy and a high probability of scoring low. Additionally, the marginal impact of an additional son is greater than the marginal effect of an additional daughter. Whereas each additional son is associated with a 2% decline in the probability of having a high level of customary autonomy, each additional daughter is associated with a 1.5% decline.

As discussed earlier, the impact of each regressor on the index of customary autonomy can be thought of as the sum of its direct and indirect effects. The indirect effect arises because a change in the regressor simultaneously impacts on both noncustomary autonomy and realized autonomy which are, in turn, correlated with customary autonomy. Adding noncustomary autonomy and realized autonomy to Model 1 almost doubles the pseudo- R^2 from 0.1 in Model 1 to 0.18 in Model 2. However, noncustomary autonomy has a much greater impact on customary autonomy than realized autonomy. In Model 2, a marginal increase in the index of realized autonomy increases the probability of being in the high category of customary autonomy by only 3% and decreases the probability of being in the low category by only 2%; the corresponding change in probabilities due to a marginal increase in index of noncustomary autonomy are 15% and -10%, respectively.

As explained above, in Model 2 the signs and magnitude of the coefficients represent only the direct effect of the regressors on customary autonomy. From this model we see that the negative relationship found in Model 1 between residence in Upper Egypt and customary autonomy is almost entirely due to the direct effect of such residence on customary autonomy. We also find that controlling for other autonomy indices explains away some of the effect of residence in rural Upper Egypt, but enhances the effect of living in urban Upper Egypt. Nonetheless, the negative impact on customary autonomy of living in urban Upper Egypt is less than the negative impact of living in rural Upper Egypt. Together these results suggest that a) there is a difference in norms about who should control decisions in matters related to children between Upper Egypt and the rest of Egypt, with the difference being more in rural than in urban Upper Egypt, and b) the impact of living in urban Upper Egypt on customary autonomy is the opposite of its effect on the other autonomy indices.

The socioeconomic level of the household and years of own education not only have significant total effects on customary autonomy but also have significant direct effects. However, the direct effects are half and one third, respectively, of their total effects seen in Model 1. Thus, whereas education of the woman and her socioeconomic class do directly affect her level of customary autonomy, a large part of the affect is through the positive impact of these modernization variables on the other dimensions of autonomy. However, controlling for the other autonomy indices explains the positive impact of television viewing and husband's education, and the negative impact of a rural childhood on customary autonomy.

Only a part of the total positive effect on customary autonomy of being employed and controlling earnings is explained away by controls for realized and noncustomary autonomy. On the other hand, almost all of the negative impact on customary autonomy of working without earnings is a direct effect. Notably, the direct effect on customary autonomy of working without earnings control, though still not significant, is much larger and opposite in sign to its total effect. Thus, employment directly translates into greater customary autonomy only when women also control their earnings.

Neither age nor the co-residence of husband's relatives affects noncustomary autonomy directly. However, the negative total effect of the number of sons and daughters on customary autonomy is almost

entirely due to a similarly strong direct negative effect, implying that among the three indices, customary autonomy is the one most affected by the number of sons and the number of daughters.

5.3.2 Multivariate Analysis of Noncustomary Autonomy

Table 5.3 presents the ordered logit estimates for alternative models of noncustomary autonomy. Note that for noncustomary autonomy, the direction (positive or negative) of impact of all regressors on the probability of being in the medium category is the same as the direction of impact of being in the high category. By contrast, for customary autonomy (and, as we shall see, for realized autonomy too) the direction of impact of each regressor on the medium category is the same as that for the low category. Substantively, this implies that the effect of each regressor is to alter most the probability of a woman having a low score in noncustomary autonomy and a high score in customary and realized autonomy.⁴

As before, the probabilities reported under Model 1 represent the total effect of regressors. In this model, in comparison with women living in urban Lower Egypt, women living in the Urban Governorates have an 18% higher probability of scoring high on noncustomary autonomy and those living in rural Upper Egypt have a 25% lower probability of scoring high on noncustomary autonomy. Women in all other areas do not differ significantly from women in urban Lower Egypt (the reference category) in terms of their scores on noncustomary autonomy. A woman who had a rural childhood had on average an 11% lower probability of scoring high on noncustomary autonomy.

As was the case for customary autonomy, most of the modernization variables tend to have the predicted impact, positive and significant, on the probability of also scoring high on the noncustomary autonomy index. Thus, the higher the socioeconomic index of the household, the number of years of own education, the number of hours of television viewing, and the number of years of husband's education, the higher the probability of scoring either high or medium, and the lower the probability of scoring low, on noncustomary autonomy. Again, one year of own education adds more to the probability of scoring high on noncustomary autonomy than an additional year of husband's education.

As compared with women whose husbands are in agriculture, women whose husbands are in professional, technical, or clerical jobs have a 20% higher probability of scoring high on noncustomary autonomy. Similarly, compared to women in the reference group, women whose husbands were in manual production had a 16% higher probability of scoring high on noncustomary autonomy. Having a husband in sales and service occupations did not distinguish women in terms of their level of noncustomary autonomy.

Although working with control over earnings distinguished women in terms of customary autonomy, it did not, contrary to expectations, distinguish them in terms of their noncustomary autonomy. Rather, women who were employed but did not control their earnings had a 23% higher probability of scoring high on noncustomary autonomy and a 16% lower probability of scoring low than women who did not work. Again, women who worked without earning had a significantly lower probability of scoring high on noncustomary autonomy than women who did not work. Consequently, only women who work with little control over earnings appear to have significantly higher levels of noncustomary autonomy than other women.

Women living in larger households tend to have a lower probability of scoring high or medium on noncustomary autonomy. The presence of the husband's relatives has a negative impact on women's scores

⁴This follows from the mathematical requirement that changes, i.e., percent changes in probability for continuous variables and absolute changes in probability for dummies, over all categories of the dependent variable must sum to 0.

Table 5.3 Percent change in probability calculated from ordered logit regression estimates of alternative models of the index of noncustomary autonomy

Variables	Autonomy category	Percent change in probability of being in each noncustomary autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
MODERNIZATION VARIABLES			
<u>Household characteristics</u>			
Region of residence: (Ref. Categ.: Urban Lower Egypt)			
Urban governorates	Low	-12.87***	-13.78***
	Medium	2.87	3.70
	High	18.06	20.28
Lower Egypt:Rural	Low	8.99	10.18
	Medium	-2.24	-2.89
	High	-10.31	-11.87
Upper Egypt:Urban	Low	-3.18	-13.36**
	Medium	.74	3.34
	High	4.04	19.27
Upper Egypt:Rural	Low	24.76***	-3.78
	Medium	-6.60	1.05
	High	-25.14	5.02
Socio-economic level	Low	-.68***	-.38***
	Medium	.20	.15
	High	.49	.23
<u>Individual characteristics</u>			
Years of education	Low	-1.94***	-1.25***
	Medium	.56	.50
	High	1.38	.75
Hours watching TV	Low	-1.43***	-1.24***
	Medium	.41	.49
	High	1.02	.75
Rural childhood	Low	9.51*	7.88
	Medium	-2.10	-2.06
	High	-10.60	-9.22
Proportion of life spent in the place of interview	Low	2.08	1.54
	Medium	-.60	-.61
	High	-1.48	-.93
<u>Own employment</u>			
(Ref. Categ.: Not employed)			
Employed for cash and:			
-Most earnings for self	Low	-12.80	-6.46
	Medium	2.41	1.68
	High	17.44	8.70
-At least half to family	Low	-16.48***	-15.96***
	Medium	3.03	3.80
	High	23.36	23.50
Employed not for cash	Low	13.82**	12.15*
	Medium	-3.86	-3.72
	High	-15.54	-14.15

Table 5.3—cont.

Variables	Autonomy category	Percent change in probability of being in each noncustomary autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
<u>Husband's characteristics</u>			
Years of education	Low	-.86***	-.55***
	Medium	.25	.22
	High	.61	.33
Profession: (Ref. Categ.: Agriculture and none or don't know)			
Professional, managerial, technical, or clerical	Low	-14.12**	-11.28*
	Medium	2.90	2.94
	High	19.82	16.03
Sales and services	Low	-4.77	-2.15
	Medium	1.11	.60
	High	6.17	2.81
Manual Production	Low	-11.55***	-5.29
	Medium	2.62	1.47
	High	16.02	7.13
<u>CULTURAL VARIABLES</u>			
<u>Household characteristics</u>			
Household size	Low	.77***	.54***
	Medium	-.22	-.21
	High	-.54	-.32
Relatives co-resident (Ref. Categ.: No relatives co-resident)			
Husband's relatives	Low	28.16***	24.42***
	Medium	-7.31	-6.99
	High	-27.67	-25.25
Only wife's relatives	Low	-22.01**	-21.71*
	Medium	3.11	4.37
	High	32.21	33.31
<u>Individual characteristics</u>			
Age	Low	-.62***	-.51***
	Medium	.18	.20
	High	.44	.31
Muslim	Low	10.55	5.08
	Medium	-1.93	-1.28
	High	-11.29	-6.05
<u>Marriage and children</u>			
Age at first marriage	Low	.38**	.34**
	Medium	-.11	-.14
	High	-.27	-.21
Married more than once	Low	9.99	2.48
	Medium	-2.72	-.71
	High	-11.56	-3.12
Husband is a first cousin	Low	2.45	1.10
	Medium	-.60	-.31
	High	-2.98	-1.40

Table 5.3—cont.

Variables	Autonomy category	Percent change in probability of being in each noncustomary autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
Number of sons born	Low	.72*	-.43
	Medium	-.21	.17
	High	-.51	.26
Number of daughters	Low	.62	-.14
	Medium	-.18	.05
	High	-.44	.08
<u>Other autonomy indices</u>			
Customary autonomy	Low	na	-12.73***
	Medium		5.07
	High		7.66
Realized autonomy	Low	na	-10.29***
	Medium		4.10
	High		6.19
Intercept		-.21***	-2.70***
μ		1.92	2.28
Log likelihood		-7112.61	-6281.19
Pseudo-R ²		0.15	0.25

^aFor dummy variables, this gives the percent increase/decrease in probability of being in each autonomy category on account of being in the dummy category coded 1 instead of the category coded 0. These probabilities do not add to 0 (See text for explanation). For continuous variables, this gives the increase/decrease in the probability of being in each autonomy category per unit change in the explanatory variable. These probabilities should add to 0 with a margin of error due to rounding.

*** = coefficient on which probabilities are based is significant at probability < 1%

** = coefficient on which probabilities are based is significant at probability between 1% and 5%

* = coefficient on which probabilities are based is significant at probability between 5% and 10%

on noncustomary autonomy; the presence of own relatives has a significant positive impact. As compared with women who have neither own nor husband's relatives co-resident, women who have their husband's relatives co-resident have a 28% lower probability of scoring high on noncustomary autonomy, and women who have their own relatives co-resident have a 32% higher probability of scoring high on noncustomary autonomy.

As expected, older women score higher on noncustomary autonomy than younger women. However, contrary to expectations, a higher age at first marriage is associated with a lower probability of scoring high or medium on noncustomary autonomy. The number of sons reduces the probability of scoring high on noncustomary autonomy, but this effect is only marginally significant.

Adding realized autonomy and customary autonomy to the total effects model for noncustomary autonomy increases the pseudo- R^2 by two thirds, from 0.15 to 0.25. The relationship of noncustomary autonomy with realized autonomy is similar in magnitude and direction to its relationship with customary autonomy. A unit increase in the index of customary autonomy increases the probability of scoring high on noncustomary autonomy by 8% and decreases the probability of scoring low by 13%. The corresponding probability changes for a unit increase in realized autonomy are 6% and -10%, respectively.

Despite the increase in pseudo- R^2 between Models 1 and 2, we find that most of the significant effects of explanatory variables on noncustomary autonomy appear to be direct effects. This conclusion is reached by comparing the results of Model 2 with Model 1. Indeed, while the magnitude of probabilities changes for some regressors, the signs and significance for most remain unchanged. There are a few notable exceptions. Thus, controlling for the other aspects of autonomy, women living in rural Upper Egypt are no longer significantly different from those living in urban Lower Egypt. Instead, women in urban Upper Egypt have a significantly higher probability of scoring high on noncustomary autonomy. Thus, in terms of direct effects only, women in the Urban Governorates and urban areas of Upper Egypt have a higher level of noncustomary autonomy than women in urban Lower Egypt, and women in rural areas of both Upper and Lower Egypt are no different in terms of noncustomary autonomy from those living in urban Lower Egypt. The direct effect of having had a rural childhood is still negative, though no longer significant.

Controlling for customary autonomy and realized autonomy also explains away the significant differences in noncustomary autonomy between women whose husbands are in manual production and women whose husbands are in agriculture. The direct effect on a woman's noncustomary autonomy of having a husband in professional or clerical occupations is positive and significant but weaker than the total effect. Finally, note that the number of sons a woman has does not, on average, affect her level of noncustomary autonomy directly.

On the other hand, the direct effects of a higher socioeconomic level of the household, of a higher level of own and husband's education, television viewing, having a husband in professional or clerical occupations, being older, and having own relatives co-resident are all significant and positive. Similarly, the direct effects of household size and husband's relatives co-resident also remain significant and negative. These direct effects comprise at least half of the corresponding total effects. Thus, a large part of the impact on noncustomary autonomy of both modernization and cultural variables (especially hours spent watching television, and the presence of own relatives and husband's relatives) is direct and not through the other autonomy indices.

Finally, the impact on noncustomary autonomy of employment mediated by earnings found in Model 1 is also almost entirely a direct effect. Thus, even after controlling for both realized and customary autonomy, when compared with women who do not work at all, women who are employed for cash and give most of their earnings to their family have a 24% (this was 23% in Model 1) higher probability of scoring high and women who work without pay have a 14% (this was 16% in Model 1) lower probability of scoring high on noncustomary autonomy.

5.3.3 Multivariate Analysis of Realized Autonomy

From Model 1, the total effects model, in Table 5.4 we see that women living only in rural Upper Egypt are significantly different in terms of their realized autonomy from women living in any of the other regions in Egypt. Women in rural Upper Egypt have a 33% lower probability of scoring high and a 59% higher probability of scoring low on realized autonomy compared with women living in urban Lower Egypt.

Table 5.4 Percent change in probability calculated from ordered logit regression estimates of alternative models of the index of realized autonomy

Variables	Autonomy category	Percent change in probability of being in each realized autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
MODERNIZATION VARIABLES			
<u>Household characteristics</u>			
Region of residence: (Ref. Categ.: Urban Lower Egypt)			
Urban governorates	Low	9.37	14.29**
	Medium	2.01	2.97
	High	-6.73	-9.91
Lower Egypt:Rural	Low	-11.58	-15.31**
	Medium	-3.11	-4.32
	High	9.58	12.98
Upper Egypt:Urban	Low	7.72	5.39
	Medium	1.63	1.20
	High	-5.66	-3.97
Upper Egypt:Rural	Low	58.65***	52.85***
	Medium	6.89	7.06
	High	-32.63	-29.96
Socioeconomic level	Low	-.50***	-.33***
	Medium	-.15	-.11
	High	.66	.44
<u>Individual characteristics</u>			
Years of education	Low	-1.36***	-.90***
	Medium	-.42	-.31
	High	1.78	1.21
Hours watching TV	Low	-.47**	-.13
	Medium	-.14	-.04
	High	.61	.17
Rural childhood	Low	2.00	-3.43
	Medium	.47	-.83
	High	-1.50	2.69
Proportion of life spent in the place of interview	Low	2.71**	1.74
	Medium	.53	.60
	High	-3.54	-2.34
<u>Own employment</u>			
Employed for cash and: (Ref. Categ.: Not employed)			
-Most earnings for self	Low	-25.02**	-20.92
	Medium	-8.87	-6.99
	High	21.54	17.61
-At least half to family	Low	-16.46**	-13.37*
	Medium	-4.99	-3.91
	High	13.72	10.92
Employed not for cash	Low	-17.70***	-22.06***
	Medium	-5.50	-7.33
	High	14.83	18.90

Table 5.4—cont.

Variables	Autonomy category	Percent change in probability of being in each realized autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
<u>Husband's characteristics</u>			
Years of education	Low	-.89***	-.74***
	Medium	-.27	-.26
	High	1.16	1.00
Profession: (Ref. Categ.: Agriculture and none or don't know)			
Professional, managerial, technical, or clerical	Low	3.50	10.42
	Medium	.79	2.19
	High	-2.62	-7.45
Sales and services	Low	-.42	1.76
	Medium	-.10	.42
	High	.32	-1.32
Manual Production	Low	-5.39	-.49
	Medium	-1.35	-.12
	High	4.27	.37
<u>CULTURAL VARIABLES</u>			
<u>Household characteristics</u>			
Household size	Low	.86***	.68***
	Medium	.26	.23
	High	-1.12	-.92
Relatives co-resident: (Ref. Categ.: No relatives co-resident)			
Husband's relatives	Low	13.60***	6.00
	Medium	2.81	1.36
	High	-9.51	-4.37
Only wife's relatives	Low	-9.87	-2.84
	Medium	-2.77	-.72
	High	7.88	2.18
<u>Individual characteristics</u>			
Age	Low	-.09	.05
	Medium	-.03	.02
	High	.11	-.07
Muslim	Low	40.83***	41.44***
	Medium	11.94	12.15
	High	-20.51	-20.71
<u>Marriage and children</u>			
Age at first marriage	Low	.13	.05
	Medium	.04	.02
	High	-.17	-.07
Married more than once	Low	17.90**	17.85**
	Medium	3.06	3.17
	High	-12.58	-12.46
Husband is a first cousin	Low	-1.63	-3.50
	Medium	-.39	-.87
	High	1.26	2.72
Number of sons born	Low	.29	.04
	Medium	.09	.01
	High	-.38	-.05

Table 5.4—cont.

Variables	Autonomy category	Percent change in probability of being in each realized autonomy category ^a	
		Model 1: Total effects	Model 2: Direct effects
Number of daughters	Low	.56*	.44
	Medium	.17	.15
	High	-.74	-.60
<u>Other autonomy indices</u>			
Customary autonomy	Low	-	-1.28***
	Medium		-.44
	High		1.71
Noncustomary autonomy	Low	-	-6.11***
	Medium		-2.10
	High		8.21
Intercept		1.32***	.69***
μ		1.39	1.48
Log likelihood		-7450.38	7184.12
Pseudo-R ²		.10	.13

^aFor dummy variables, this gives the percent increase/decrease in probability of being in each autonomy category on account of being in the dummy category coded 1 instead of the category coded 0. These probabilities do not add to 0 (See text for explanation). For continuous variables, this gives the increase/decrease in the probability of being in each autonomy category per unit change in the explanatory variable. These probabilities should add to 0 with a margin of error due to rounding.

*** = coefficient on which probabilities are based is significant at probability < 1%

** = coefficient on which probabilities are based is significant at probability between 1% and 5%

* = coefficient on which probabilities are based is significant at probability between 5% and 10%

Realized autonomy is again positively associated with the socioeconomic status of the household, the years of own and husband's education and hours spent watching television. Unlike the other indices, scores on realized autonomy do not vary by the husband's occupation. Also, the longer a woman has lived in her place of interview, the lower her probability of scoring high on realized autonomy. Thus, the migration experience of a woman, which is not significantly related with both customary and noncustomary autonomy, is significantly associated with women's realized autonomy.

The realized autonomy of women is consistently positively related with being employed. Irrespective of whether women work for cash with or without control over earnings or work without earning, they have a higher probability of scoring high on realized autonomy than women who do not work at all. Notably, this is the only aspect of autonomy that is positively related to women working without cash earnings.

As was the case for the other measures of autonomy, larger households and co-residence of husband's relatives are both associated with a lower probability of a high score on realized autonomy. Realized autonomy does not vary by age. Interestingly, realized autonomy is significantly different between Muslim and non-Muslim (mostly Christian) women, with Muslim women having a probability of scoring high that is one fifth lower than that of non-Muslim women. Also, women who have been married more than once have a 13% lower probability of scoring high and an 18% higher probability of scoring low on realized autonomy. Note that neither customary autonomy nor noncustomary autonomy varied by either the religion or remarriage dummy variables.

The addition of controls for noncustomary and customary autonomy adds little to the pseudo- R^2 of Model 1. It is notable, however, that realized autonomy is affected more by noncustomary autonomy than by customary autonomy. A unit change in noncustomary autonomy increases the probability of scoring high on realized autonomy by 8% and decreases the probability of scoring low by 6%. The corresponding effects on realized autonomy of a unit change in customary autonomy are almost negligible, i.e., at 2% and -1%, though still significant.

The direct effects of region on realized autonomy are different from the total effects, as can be seen from Model 2. In comparison to women in urban Lower Egypt, women in the Urban Governorates in addition to women in rural Upper Egypt have a significantly lower probability of scoring high on realized autonomy. On the other hand, women in rural Lower Egypt have a 13% higher probability of having high realized autonomy and a 15% lower probability of having low realized autonomy.

Controlling for customary and noncustomary autonomy levels explains part of the effect of several of the modernization variables by either decreasing the percent change in probability, as in the case of the impact of the socioeconomic status of the household and years of education, or by completely explaining the effect, as in the case of the migratory experience of the woman and number of hours of television viewing. However, controls for noncustomary and customary autonomy explain only a small part of the impact of husband's education on women's realized autonomy. Note that the direct effect of a woman's husband's education on her realized autonomy is almost 80% as strong as the direct effect of her own education on her realized autonomy. Thus, the husband's education directly impacts a woman's realized autonomy almost as much as does her own education.

Once variation in the other autonomy indices is controlled, women who were employed and kept most earnings for themselves are no longer significantly more likely to score high on realized autonomy than women who do not work. Also, a part of the positive effect of working and not controlling income is explained. Thus, while the direct effect of all types of employment, like the total effect, is positive, the women most significantly different (i.e., having significantly higher levels of realized autonomy) from women who do not work are those that either give their earnings to their families or those who do not receive cash for the work they do.

The impact of the cultural variables on levels of realized autonomy changes little between Models 1 and 4 with the exception that the negative impact on realized autonomy of the co-residence of husband's relatives is explained away. Thus, on average, co-residence of husband's relatives does not directly affect women's realized autonomy; it affects it only by lowering their customary or noncustomary autonomy, or both.

Our expectation had been that realized autonomy would be affected more by kinship arrangements and less by individual-level factors. This assumption is upheld for the most part. A number of cultural variables have a significant effect on realized autonomy that did not affect other aspects of autonomy, and several individual-level factors, such as age and early exposure to urban living, do not affect realized

autonomy. Also, realized autonomy, more than the other aspects of autonomy, varies by household size and husband's education, but contrary to expectations it is negatively related to the co-residence of husband's relatives only indirectly.

5.3.4 Comparison of Multivariate Results for All Autonomy Indices

Although residence in the more urban and developed regions of the country was hypothesized to be associated with a higher level of autonomy, we do not find the different regions of residence to have a consistent impact on all aspects of autonomy. Indeed, some tend to be simultaneously associated with significantly higher levels of one aspect of autonomy and significantly lower levels of another aspect of autonomy. Specifically, women living in the whole of Upper Egypt have lower levels of customary autonomy than women living in other regions. For rural Upper Egypt only this negative effect on customary autonomy is strong enough to induce a negative indirect effect on noncustomary autonomy. Realized autonomy is also significantly lower among women in rural Upper Egypt. However, the significantly lower levels of customary autonomy in urban Upper Egypt are matched by higher levels of noncustomary autonomy there, so that the total effect of residence in urban Upper Egypt on noncustomary autonomy is not significant but the direct effect is. Women in urban Upper Egypt do not differ in terms of realized autonomy from women in urban Lower Egypt (the reference group). Residence in the Urban Governorates on the other hand is, simultaneously, positively related to levels of noncustomary autonomy, unrelated to levels of customary autonomy, and negatively related to realized autonomy. In summary, these results suggest that urban residence affects noncustomary autonomy positively and more than the region of the country does, residence in Upper Egypt affects customary autonomy negatively and more than the rural-urban division does, and realized autonomy varies in no predetermined fashion with either region or rural-urban residence.

Both the socioeconomic status of the household and the number of years of education of the respondent have an independent and positive effect on all three aspects of autonomy. However, on average, a woman's husband's education level has a significantly positive direct impact on only her levels of noncustomary autonomy and realized autonomy and not on her level of customary autonomy. The results also suggest that a woman's realized autonomy varies more with her husband's education than does her noncustomary autonomy. In addition, a woman's realized autonomy is almost equally affected by her own and her husband's level of education, whereas noncustomary and customary autonomy are affected much more by a woman's own level of education than by her husband's level of education.

Of the three autonomy indices, only the level of realized autonomy is unaffected directly and indirectly by the husband's profession. Further, women whose husbands are in sales and service do not differ with respect to their scores on any autonomy index from women whose husbands are in agriculture. Having a husband in the professional, managerial, technical, or clerical professions, as hypothesized, increases the probability of having higher levels of noncustomary autonomy but does not directly affect customary autonomy. Finally, women whose husbands are in manual production have a higher probability of scoring high on both the indices of customary autonomy and noncustomary autonomy. Given that the direct effect is not significant for either dimension of autonomy, we conclude that the belief that women should have a decision-making role in the traditional sphere and the belief that women should have a decision-making role in the non-traditional sphere are mutually reinforced if a woman's husband is in manual production.

Exposure to the outside world through television viewing directly affects only a woman's level of noncustomary autonomy and only indirectly affects customary and realized autonomy. This suggests that continued exposure to new ideas leads to high levels of all aspects of autonomy primarily through changing women's views on women's roles in areas not traditionally in their control. On the other hand, the lack of early exposure to urban living as measured by the dummy "rural childhood" appears to affect women's opinions about women's decision-making roles in all spheres (traditional and nontraditional) simultaneously,

so that the total effect of a rural childhood on both noncustomary and customary autonomy is negative and significant, but the direct effects are not. Realized autonomy, on the other hand, is unaffected by early exposure to rural living.

The migration experience of a woman does not affect her expressed beliefs about women's decision-making roles, but does affect the probability of her having a high level of realized autonomy. This suggests that migration acts primarily to increase autonomy not by changing beliefs and norms, but by forcing greater freedom of movement on women. However, since we do not have information on how many times a woman may have moved or the duration of stay anywhere other than the present place this conclusion remains speculative.

We hypothesized earlier that women who are employed will have greater autonomy than women who are not employed but that the strength of this relationship would be mediated by whether women earn cash or not for the work they do, and, if they do earn cash, whether they have control over their earnings or not. Our analysis reveals that the validity of these hypotheses depends on which aspect of autonomy is being examined. Only realized autonomy is consistently higher among women who are employed (irrespective of earnings) as compared with women who are not employed; customary and noncustomary autonomy are significantly lower among women who are employed as compared with women who are not employed if the employment is not for cash. Indeed, working without earning is simultaneously associated with higher realized autonomy but a lower probability of believing that women should have decision-making control. Greater control over earnings also does not necessarily imply higher autonomy: only customary autonomy is significantly higher among women who earn and keep most of their earnings for themselves. Working with control over earnings has a significant positive effect on realized autonomy only indirectly, whereas noncustomary autonomy does not differ between women who work and have control over earnings and those who do not work at all. On the other hand, both realized autonomy and noncustomary autonomy are significantly higher among women who earn but give most of their earnings to their families.

The consistently positive impact of employment, irrespective of earnings and earnings control, on realized autonomy coupled with only an inconsistent effect on customary and noncustomary autonomy suggests that employment per se may not directly affect women's beliefs about women's roles in decision-making, and that the positive effect on realized autonomy of employment is independent of women's beliefs about autonomy. Perhaps the positive association of employment with realized autonomy is due mainly to the fact that employed women require greater freedom of movement, a factor not mediated by earnings. On the other hand, working without cash earnings may negatively affect women's opinions on women's decision-making roles, because such work makes women's positions more vulnerable. Specifically, work without pay may remove women from their traditional domestic roles, roles that are imbued with prestige and that have culturally sanctioned routes of access to resources, without assuring them of other sources of prestige or compensating them with greater access to, or control over, resources.

Explaining the contrary effects of earnings control on autonomy is confounded by the fact that control over earnings is defined not in terms of who decides what to do with earnings but in terms of how earnings are disbursed, i.e., whether women give most of their earnings to their families or keep most for themselves. Critical information on who decides that the woman's earnings should be kept for herself or given to the family and who decides the actual disbursement of this income is not available. Nonetheless, a possible explanation for women who earn and do not control their earnings favoring women's decision-making control in nontraditional areas may be that it is precisely the fact that these women are earning and yet not controlling earnings that may make them want more control in nontraditional areas. Importantly, the fact that women who control their earnings do not differ in their views on noncustomary autonomy from women who do not work, but have much greater customary autonomy, suggests that control over income may primarily translate into a desire for greater control over the area for which women are traditionally responsible.

The size of the household does not directly affect levels of customary autonomy, but significantly reduces both the level of noncustomary and realized autonomy. This negative association of household size with autonomy can have at least two possible explanations. On the one hand, household size is likely to be positively associated with non-nuclear families, especially when controlling for the numbers of children. As discussed earlier, to the extent that living in non-nuclear families is the more traditional arrangement, women in larger households are more likely to have traditional power expectations and limited freedom of movement. On the other hand, the greater the number of people in a household the less likely it is that decision-making powers will rest solely in the hands of the respondent or her husband. The much stronger impact of household size on realized autonomy as compared with customary or noncustomary autonomy further suggests that women's freedoms and powers are inhibited by large households even more than women's opinions about such freedoms and powers.

Simultaneously, however, the dummy variables indicating who constitutes the household in which women live affect only women's noncustomary autonomy. As expected, the co-residence of husband's relatives reduces the probability that women will have a high or medium level of noncustomary autonomy, whereas the co-residence of own relatives increases the probability that women will have a high or medium level of noncustomary autonomy. The fact that realized autonomy does not differ by the presence of husband's relatives perhaps suggests that the co-residence of husband's relatives does not *cause* women to have lower levels of realized autonomy, but that women who have more traditional views with regard to women's roles and decision-making powers are the ones who are more likely to be found living with their husband's relatives and less likely to live with their own.

The remaining cultural variables either do not directly affect any dimension of autonomy or affect only one. Thus, noncustomary autonomy is significantly associated only with age and age at first marriage, customary autonomy only with the numbers of sons and daughters, and realized autonomy only with being Muslim and being remarried. Specifically, older women, as hypothesized, are more likely to express opinions favoring women's decision-making input in nontraditional spheres than younger women. However, the older the woman at the time of her first marriage, the lower her probability of scoring high on noncustomary autonomy. There is no obvious explanation for this last result, but it does suggest that we cannot always assume that in every culture a high age at marriage will necessarily increase women's autonomy. Especially in an analysis in which the correlates of an older age at marriage (factors such as education and employment) are being controlled, an older age at first marriage may negatively affect cultural perceptions of self-worth with consequent effects on autonomy.

Given the greater prevalence of *purdah* among them, Muslim women are, not surprisingly, found to have lower realized autonomy than non-Muslim women. However, remarried women are also found to have lower realized autonomy than women married only once. Thus, our expectation of the greater autonomy of remarried women, based on the assumption that divorce (or loss of a husband) and remarriage require a woman to make decisions for herself, does not appear to be culturally appropriate. Instead, a culture-specific explanation needs to be sought which takes into consideration Islamic divorce laws, the more typical circumstances of divorce in Egypt, the extent of stigmatization of divorced or widowed women in Egyptian society, and the associated context-specific insecurities of women who have undergone divorce or lost a husband.

Finally, among all the cultural variables, a woman's level of customary autonomy is associated significantly only with the numbers of sons and daughters she has ever had. This result is unexpected on two counts. On the one hand, it is unexpected because the number of sons even more than the number of daughters reduces the probability of scoring high on autonomy. Given that some son preference has been documented for Egypt, our expectation was that having sons should at least give rise to a greater sense of self-worth and also place women in a better position to take control over their lives. In addition, we did not expect

that the one dimension of autonomy to be negatively related to numbers of children would be customary autonomy, which is the dimension concerned with control over decisions related to children. Perhaps causality runs the other way: a low level of female control over decisions regarding children (especially control over contraception) being responsible for larger numbers of both daughters and sons. Nonetheless, this result underscores the findings of other researchers that high fertility is more typical of women with low autonomy.

Judging from the pseudo- R^2 , the modernization and cultural model best explains variations in noncustomary autonomy and least explains variations in realized autonomy. Further, whereas region and urbanization do not always have the expected result on various aspects of autonomy, all other modernization variables tend to be positively associated with autonomy, especially noncustomary autonomy. Finally, noncustomary autonomy appears to affect both realized autonomy and customary autonomy more than they affect each other or noncustomary autonomy. In other words, women who reveal high levels of noncustomary autonomy are much more likely to also have high levels of the other two aspects of autonomy than if they reveal high levels of either customary or realized autonomy.

Chapter 6

Conclusions

This analysis has yielded several insights, some expected and others unexpected, into the association of different facets of autonomy with desired demographic outcomes and into the factors that underlie the variation in autonomy among Egyptian women. Because these insights have applicability beyond the specific case of Egypt let us pull them together and examine the lessons that can be learnt.

As researchers have repeatedly found, there is no one measure of autonomy. In this analysis we used three different measures and found them to be only moderately correlated with one another. Despite this, high scores on all three measures were found to be associated with a higher use of modern contraceptives and a lower probability of having any children die before the age of 5 at each parity. Thus, to answer a question that we posed at the beginning of this study, even in societies where female autonomy may not be a coveted female trait, higher female autonomy, however measured, is positively associated with favored demographic outcomes. However, if all aspects of autonomy are similarly related to demographic behavior, does it matter which aspect of autonomy we try to manipulate in order to achieve desired demographic outcomes? This analysis was not a multivariate causal analysis of demographic outcomes; consequently it cannot be used to answer this question conclusively. Nonetheless, the analysis does suggest that of the three indices of customary autonomy, noncustomary autonomy, and realized autonomy, the index measuring women's views on who should have decision-making control in the domestic sphere (customary autonomy index) had the weakest association with the use of modern contraceptives and zero infant deaths at each parity, and the index measuring women's views of decision-making control in areas not traditionally open to women (noncustomary autonomy index) appeared to have the most consistently positive association.

The relatively weak relationship of the customary autonomy index with demographic outcomes may in part be due to the fact that a high score on the customary autonomy index is not really telling us much about the woman other than that she is not different from most other women. Indeed, two out of three women had a score of 3 or 4 on the customary autonomy index, suggesting that the belief that women should have at least an equal say in matters related to the lives of children, family planning and having another child is a norm rather than an innovation among Egyptian women. By contrast, only 17% of all women get the highest score on the realized autonomy index, and even fewer score high on the noncustomary autonomy index.

The relative importance of the three aspects of autonomy is only relevant if we find that they are affected by different factors or by the same factors in different ways. If they are affected by the same factors in the same way, then manipulating these factors should increase the level of all three indices simultaneously. Our cross-sectional examination of factors underlying the variation in customary, noncustomary, and realized autonomy revealed only few factors that were consistently and significantly related to all three aspects of autonomy. In addition, we found that there were some factors that either did not affect views on women's relative power in decision-making, but did affect realized autonomy, or were associated in one direction with the former while being associated in the other direction with the latter. In other words, while most factors have a similar impact on the indices of customary autonomy and noncustomary autonomy, they do not always have the same impact on the realized autonomy index.

A number of the modernization and economic variables have the predicted significant association with all three indices, although, for most variables, the strength of the association is the least for the customary autonomy index. On average, the greater the wealth of a household, the greater the exposure of the woman to the outside world, and the more educated the woman and her husband, the greater is her

probability of scoring high on all three aspects of autonomy. Interestingly, of these, the impact of the husband's education is clearly the greatest on women's scores on the realized autonomy index, and that of exposure and women's education is greatest on the noncustomary autonomy index. There is little difference in the impact of socioeconomic status on the three indices. Thus, it appears that modernization efforts that affect a women's individual characteristics impact on women most by altering their views about women's role in decision-making; modernization efforts that affect the circumstances in which women live, such as the level of education of her husband, affect her realized level of autonomy most.

In keeping with the stronger impact of modernization variables on noncustomary autonomy we find that urban living, especially current residence in urban areas, is more conducive to scoring higher on noncustomary autonomy. Interestingly, however, urban living does not necessarily imply higher levels of realized autonomy. Specifically, women living in the Urban Governorates, despite higher levels of noncustomary autonomy, have a much lower level of realized autonomy than women from all other areas with the exception of rural Upper Egypt. On the other hand, Upper Egypt as a whole has women who tend to score lower on customary autonomy than women in other parts of Egypt. This suggests that perhaps the norm for autonomy in decision-making with regard to children is lower in Upper Egypt than in other parts of the country.

Interestingly, early exposure to urban living affects women's scores on the indices measuring women's views on decision-making autonomy, while leaving their scores on realized autonomy unaffected. On the one hand, this result emphasizes the innovative nature of high scores on noncustomary autonomy. On the other, it suggests that the norm of a high level of customary autonomy is reinforced by early socialization in urban rather than rural living. Further, the lack of any effect of early exposure to urban living on realized autonomy once more suggests that individual-level characteristics affect a woman's exercise of autonomy least. In this context, we believe that the greater realized autonomy of women who have been recent migrants derives not from the greater exposure to new ways of doing things (for that should have affected noncustomary autonomy too) but from the greater need for freedom of movement among migrant women.

The impact of employment on autonomy is different for each dimension of autonomy. Realized autonomy is the only aspect that is higher among women who work, irrespective of whether they control their earnings or not, and whether they earn cash or not for the work they do. By contrast, noncustomary autonomy is higher only among women who work and give most of their earnings to their families, and customary autonomy is higher only among women who work and keep most of their earnings for themselves. Women who are employed without cash earnings have lower levels of both customary and noncustomary autonomy than women who do not work at all.

Together these results imply that autonomy as measured by perceptions about women's roles is not affected by employment per se, but by access to, and control over, earnings derived from employment. Working without earnings consistently undermines women's perceptions about the control women should have over decision-making in both traditional and nontraditional realms. However, if women earn, more control over earnings does not necessarily imply that women will favor greater female input in decision-making in the nontraditional realm. Indeed, the results suggest that more control over earnings translates into an increase in the likelihood that women will want more control over decisions in their traditional areas of influence.

Irrespective of earnings and earnings control, employment is positively associated with realized autonomy. Keeping in mind that the realized autonomy index is largely a measure of women's freedom of movement, this positive association is likely to be a consequence of the greater necessity for freedom of

movement among women who work. Note that this greater need for freedom of movement is unlikely to be mediated by earnings.

Surprisingly, only a few cultural variables affect any of the aspects of autonomy directly. Controlling for modernization factors, we find that realized autonomy is lower among women who are Muslim, who live in large, perhaps non-nuclear households and who are remarried. Although the first two effects are as hypothesized, being remarried does not, as expected, translate into more autonomy. Indeed, the lower probability of realized autonomy among women who have been married more than once warns us against transplanting conceptions about cultural phenomena acquired in one cultural setting to another.

This warning is also relevant for assumptions about the impact of age at marriage on autonomy. We find that women who have married late have a lower, not a higher (as predicted), probability of scoring high on the noncustomary autonomy index. Indeed, depending on the cultural context, an older age at marriage, especially controlling for education and other modernization correlates of a 1 older age at marriage, may have a negative impact on self-worth with consequent effects on autonomy.

Our hypotheses that the co-residence of husband's relatives would be associated with lower levels of autonomy, and the co-residence of the woman's own relatives would be associated with higher levels of autonomy, were upheld not for realized autonomy but for noncustomary autonomy. This suggests that the co-residence of in-laws is not causally related to autonomy. Instead the association may be due to the fact that women who co-reside with their husband's relatives are more likely to be the ones who have traditional views.

Given the patriarchal basis of the Egyptian family, our expectation was that the number of children, especially sons, would enhance women's autonomy. This expectation is not upheld. Indeed, the greater the number of sons, as well as the greater the number of daughters, the lower the probability of having high scores, especially on customary autonomy. This finding re-emphasizes the negative relationship of fertility with women's status. In addition, it suggests that higher fertility lowers women's autonomy even in their traditional areas of influence.

Finally, controlling for all other modernization, economic and cultural factors, we found that all aspects of autonomy are positively and significantly related to one another; however, changes in noncustomary autonomy affect the other two aspects of autonomy the most. This suggests that whereas the three aspects of autonomy tend to go together, high levels of all facets of autonomy are more likely to be found in a woman who has a high score on the noncustomary autonomy index than if she displays high levels of either customary autonomy or realized autonomy.

The following findings together yield an important policy conclusion:

- Noncustomary autonomy is the one aspect of autonomy that is most consistently related to desired demographic outcomes.
- When scores on the noncustomary autonomy index are high, scores on other dimensions of autonomy are also most likely to be high.
- Noncustomary autonomy, more than any other aspect of autonomy, is most consistently related to modernization influences, especially as embodied in individual characteristics.

They suggest that even without making difficult and often undesired changes to the kinship structure, all aspects of autonomy can be most easily increased by manipulating the modernization variables, variables that are, happily, most amenable to policy manipulation.

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APPENDICES

Appendix 1

Appendix 1 Correlation coefficients of variables included in the Ordered Logit Regression models of customary autonomy, non-customary autonomy and realized autonomy

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Region																
1 Urban Gov.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Lower Egypt-R	-.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Upper Egypt-U	-.22	-.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Upper Egypt-R	-.33	-.34	-.21	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Socioeconomic level																
6 Years of education	.27	-.19	.09	-.27	.60	-	-	-	-	-	-	-	-	-	-	-
7 Rural childhood																
8 % of life spent here	-.05	.03	-.10	.16	-.13	-.10	.01	-	-	-	-	-	-	-	-	-
9 Hours watching TV																
Employed for cash and:																
10 Most earnings for self	.10	-.06	.01	-.08	.18	.28	-.13	-.03	.02	-	-	-	-	-	-	-
11 Most to family	.07	-.05	.05	-.13	.22	.43	-.19	-.05	.01	-.05	-	-	-	-	-	-
12 Employed not for cash	-.14	.28	-.08	-.04	-.17	-.15	.19	.04	-.10	-.05	-.09	-	-	-	-	-
13 Husband's education																
Husband's profession																
14 Prof., Manag., Tech., Cler.	.12	-.10	.07	-.13	.38	.55	-.23	-.09	.09	.20	.29	-.10	.63	-	-	-
15 Sales & Service	.10	-.08	.07	-.09	.10	-.01	-.10	-.01	.07	-.01	-.00	-.04	.04	-.25	-	-
16 Production	.12	-.10	.04	-.12	.06	-.09	-.14	-.03	.06	-.07	-.12	-.10	-.14	-.28	-.34	-
17 Household size																
Relatives co-resident																
18 Husband's relatives	-.20	.16	-.07	.17	-.23	-.16	.24	.07	-.05	-.05	-.10	.11	-.09	-.09	-.06	-.06
19 Own relatives	.06	-.04	-.01	.01	.03	.04	-.04	.05	-.01	.03	.01	-.01	.02	.01	-.00	.01
20 Age																
21 Muslim																
22 Age at marriage																
23 Remarried																
24 Husband is cousin																
25 Number of sons																
26 Number of daughters																
27 Customary autonomy																
28 Noncustomary autonomy																
29 Realized autonomy																

Appendix 1—*cont.*

Variables	17	18	19	20	21	22	23	24	25	26	27	28
17 Household size	-	-	-	-	-	-	-	-	-	-	-	-
Relatives co-resident												
18 Husband's relatives	.44	-	-	-	-	-	-	-	-	-	-	-
19 Own relatives	.05	-.08	-	-	-	-	-	-	-	-	-	-
20 Age	-.03	-.35	-.04	-	-	-	-	-	-	-	-	-
21 Muslim	.02	.01	-.01	-.04	-	-	-	-	-	-	-	-
22 Age at marriage	-.24	-.12	.05	.10	-.05	-	-	-	-	-	-	-
23 Remarried	-.04	-.10	-.02	.10	.05	-.10	-	-	-	-	-	-
24 Husband is cousin	.09	.09	-.01	-.00	-.01	-.14	-.03	-	-	-	-	-
25 Number of sons	.24	-.12	-.05	.51	.02	-.31	.02	.06	-	-	-	-
26 Number of daughters	.21	-.13	-.04	.48	.01	-.29	.01	.05	.33	-	-	-
27 Customary autonomy	-.17	-.15	.02	.03	-.02	.23	-.03	-.10	-.15	-.13	-	-
28 Noncustomary autonomy	-.25	-.24	.04	.12	-.05	.28	-.03	-.10	-.11	-.10	.54	-
29 Realized autonomy	-.22	-.15	.02	.01	-.05	.25	-.06	-.08	-.15	-.14	.33	.46

Appendix 2

Necessary Ordered Logit Formulae

The following discussion has been adapted from Greene's (1993, Chapter 21.7.2) discussion of ordered data.

Calculation of Probabilities

Using the β 's and μ estimated from the ordered logit regression for a given autonomy index, the probability of being in the low, medium or high category of the index can be evaluated such that

$$Prob(y = low) = \Lambda(-\beta'X) \quad (1)$$

$$Prob(y = medium) = \Lambda(\mu - \beta'X) - \Lambda(-\beta'X) \quad (2)$$

$$Prob(y = high) = 1 - \Lambda(\mu - \beta'X) \quad (3)$$

where Λ is the cumulative density function of the logistic distribution given by:

$$\Lambda(\beta'X) = \frac{e^{\beta'X}}{1 + e^{\beta'X}} \quad (4)$$

These probabilities will necessarily add to 1.

Conversion of Coefficients into Probability Changes

A. For continuous variables

The effect of a marginal change in a continuous regressor i on the probability of being in each of the three categories of the dependent variable is given by:

$$\frac{\delta Prob(y = 0)}{\delta X} = -\kappa(\beta'X)\beta_i \quad (5)$$

$$\frac{\delta Prob(y = 1)}{\delta X} = (\kappa(-\beta'X) - \kappa(\mu - \beta'X))\beta_i \quad (6)$$

$$\frac{\delta \text{Prob}(y = 2)}{\delta X} = \kappa(\mu - \beta'X)\beta_i, \quad (7)$$

where

$$\kappa = \frac{d\Lambda[\beta'X]}{d(\beta'X)} = \frac{e^{\beta'X}}{(1 + e^{\beta'X})^2}. \quad (8)$$

Note: The sum of the marginal effects of a given regressor on the probabilities of being in the three categories must add to 0. For each calculation the values of the other regressors are held at their means.

B. For dummy variables

The effect of a dummy variable is calculated by estimating the probability of being in each category of the dependent variable using equations 1-3, at the two values of the dummy variable (0 and 1). The absolute difference in probability for each category is due to the dummy taking the value 1 instead of 0. These differences must add to 0. The percent difference in probability is then calculated as the change in probability divided by the probability when the dummy value is 0. The percent difference need not add to 0.