

MEN MATTER: ADDITIVE AND INTERACTIVE GENDERED PREFERENCES AND REPRODUCTIVE BEHAVIOR IN KENYA*

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The extent of men's roles in reproductive decision-making in Africa is a subject of contention. Despite the volume of work on the roles men play in fertility decisions, there have been few attempts to derive direct empirical estimates of the effect of men's preferences on reproductive behavior. I employ 1989 and 1993 Kenya Demographic and Health Surveys to examine the relative roles of the reproductive preferences of males and females on contraceptive use. Additive and interactive measures of preferences document a significant effect of men's preferences, which may eclipse women's preferences. The implications of these findings are discussed.

The 1990s have witnessed rising interest in men's involvement in reproductive decisions in sub-Saharan Africa because of the considerable power men wield in this arena in the region (Bankole 1995; Dodoo 1993a; Dodoo and van Landewijk 1996; Ezeh 1991, 1993; Ezeh, Seroussi, and Riggers 1996; Isiugo-Abanihe 1994; Kannae and Pendleton 1994; Mbizvo and Adamchak 1991, 1992; Ngom 1996; Terefe and Larson 1993). The growing literature on the "male role" reflects disappointment with women's inability to translate their reproductive goals into reality. For almost three decades, many women in sub-Saharan Africa have reported a desire to cease or delay childbearing (Westoff and Bankole 1995; Westoff and Ochoa 1991), prompting massive investments in family-planning programs that, to a large extent, are predicated on a perceived "unmet needs" of women.¹ Recent investigations in some developing countries suggest that the male role contributes to the shortfall in women's behavior vis-à-vis their stated preferences (Bongaarts and Bruce 1995; Casterline, Perez, and Biddlecom 1996; Dodoo 1993a; Dodoo and van Landewijk 1996; Ezeh 1993; Isiugo-Abanihe 1994; Khalifa 1988; Mustafa and Mumford 1984; Terefe and Larsen 1993). A number of studies indicate that male family members, including spouses, are a major reason for the nonuse of contraception among females who would consider contracepting (Dodoo, Luo, and Panayotova 1997; Ezeh

1993; Phillips et al. 1997; Population Council 1995).² The most recent evidence comes from an ongoing longitudinal experiment in Northern Ghana (Binka, Nazzar, and Phillips 1995; Nazzar et al. 1995). Such evidence supports commentators who argue that cultural bases explain why male preferences may prevail over those of females in the African setting. How can we reconcile women's reports of men as obstacles with the low levels of discussion among spouses about reproductive and contraceptive issues (Bongaarts and Bruce 1995)? Although many women report limited verbal communication with their male counterparts, awareness of their spouses' views or preferences need not be inconsistent with a lack of discussion. Knowledge of a partner's preference may be obtained indirectly (e.g., via nonverbal communication or third parties).

Despite convincing arguments for the inclusion of men in fertility-related research and the mounting empirical evidence of a male role, there has been little attempt to *causally* link male's fertility preferences to reproductive behavior (Bongaarts and Bruce 1995; Dodoo et al. 1997; Ezeh 1993; Fapohunda and Todaro 1988; Isiugo-Abanihe 1994; Kannae and Pendleton 1994; Khalifa 1988; Mbizvo and Adamchak 1991; Mott and Mott 1985; Mustafa and Mumford 1984; Phillips et al. 1997; Population Council 1995; Terefe and Larsen 1993). The irony here is that research on the male role emerged because the limited success of family-planning programs in curbing fertility was perceived to result from a subversive effect of men's reproductive goals on those of females who wish to reduce their childbearing (Adebayo 1985, 1988; Hosken 1984). Even though there is some indication of when female or male preferences prevail (Bankole 1995), there are no empirical estimates of the *relative* strengths of males' and females' preferences. Likewise, little is known about the relative contributions of female and male preferences to *changes* in reproductive behavior. In sum, although the roles of men are acknowledged today, little is known about the relative extent to which they matter. The current study explores the relative strengths of males' and females' (gendered) preferences in the determination of reproductive behavior.³

A search of the literature yields only two studies that explore a causal effect of men's preferences on reproductive behavior. Unfortunately, each has drawbacks. For instance,

2. These reports do not necessarily contradict Demographic and Health Survey data in which women rarely cite men as the main reason they do not use contraception. The survey restricts women to one reason for nonuse.

3. Gendered preference refers to the relative sex difference in preferences.

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1. Unmet need refers to respondents who state a preference to cease or delay childbearing but who are not using contraception.

although Dodoo (1995) suggests plausible cultural bases for the observed differences in contraceptive use between Ghana and Kenya, his dichotomous conceptualization of preferences neglects the substantial number of "spacers" in Africa (Westoff and Bankole 1995; Westoff and Ochoa 1991).⁴ His additive model also fails to consider the impact of varying degrees of agreement and disagreement between spouses. Bankole's (1995) landmark study of the *interactive* effect of males' and females' preferences on fertility in Nigeria suggests a joint approach to the fertility decision that can examine the effects of agreement/disagreement. His study linked fertility desires of couples to their childbearing two years later, but his focus on *actual* fertility raises questions about the validity of attributing the (fertility) outcome to measured preferences, given that two years offer ample opportunity for respondents to revise their preferences. Other concerns include the study's limitation to monogamous couples in a region where polygamy is widespread and (like Dodoo) the neglect of spacing, which precludes an exhaustive explication of joint or interactive preferences.

In these and other studies of fertility-related behavior, reproductive preferences mediate between background factors and attitudes on the one hand, and fertility behavior on the other (Ajzen and Fishbein 1980). The relevant theory proceeds from background factors to attitudes, then preferences, and finally behavior. Family-planning policy in the developing world is predicated on the stated preferences of many women who indicate wanting no more children. In this vein, modern contraception becomes the most significant proximate determinant of fertility (Davis and Blake 1956; Lapham and Mauldin 1985; Njogu 1991). The current study augments our understanding of the preference-behavior link by examining (1) additive and interactive preferences, because although fertility decisions may be jointly determined, comparing estimates of interactive *and* additive preferences provides a clearer indication of the relative influence of males' and females' preferences; (2) nine categories of joint preference proposed by Dodoo and van Landewijk (1996) that include spacing and allow a comparison of the effects of various types of agreement and disagreement; and (3) the relative contributions of gendered preferences to explaining differences in behavior across time. Further improvements on prior research are the inclusion of monogamous and polygamous couples and the use of a temporally more proximate behavioral outcome of preferences: *current* contraceptive use.⁵

BACKGROUND

Historically, the discussion of fertility decline in sub-Saharan Africa has involved a debate about the relative significance

4. Spacers are usually defined as respondents who want children but are uncertain about timing, would like to wait at least two years to have them, or are uncertain about whether they want children. Spacers are intermediate between "stoppers"—those who want no more children and thus need contraception—and respondents who want children soon (within two years) and thus have no need for contraception.

5. Current contraceptive use is a more valid measure of the effect of a reproductive preference. It is difficult to determine whether subsequent behavior, such as fertility two years hence, results from the stated preference.

of family-planning programs (supply factors) versus reproductive preferences (demand factors).⁶ Today, however, even staunch proponents of family-planning programs acknowledge that fertility decline in the future will depend, to a large extent, on increases in demand (Bongaarts 1995). Research on men's roles is undergirded by theoretical arguments for including measures of men's demand (Bankole 1995; Beckman 1983; Blumberg 1988; Dodoo 1993a, 1996; Dodoo et al. 1997; Ezech 1991, 1993; Fapohunda and Todaro 1988; Frank and McNicoll 1987; Hollerbach 1980, 1983; Isiugo-Abanihe 1994; Oppong 1987). Studies of the extent of men's influence in the reproductive decision have examined focus-group discussions; male attitudes, preferences, and behaviors; the extent of men's unmet needs; the impact of media programs on men's attitudes and behaviors; and the relative roles of men across countries (Bankole 1995; Dodoo 1995; Ezech 1993; Isiugo-Abanihe 1994; Khalifa 1988; Mbizvo and Adamchak 1992; Mustafa and Mumford 1984; Terefe and Larson 1993). The central argument of this literature is that traditional African culture generally bestows upon men considerable, and perhaps dominant, power in reproductive decision-making. Ezech (1993) showed that women's *attitudes* are influenced by those of their partners whereas men's are not. Bankole (1995) questions whether male dominance is a given because he finds a relative male advantage only at lower parities. However, his finding is important, given the significance of early fertility for completed family size (Bumpass, Rindfuss, and Janosik 1978; Dodoo 1993b; Rajulton, Balakrishnan, and Chen 1990; Ryder 1980).⁷

The Case for Including Men

A focus on couples, rather than women, is emerging as the analytical model of choice in the study of reproductive and related behavior (Becker 1996). This focus is predicated on an increasing awareness of the need to include men, and this is true particularly in the African setting. The core of African society is the ancestral lineage and descent, which emphasize the lineage bond over the conjugal tie and help explain why women and men may not operate as a unified entity in marriage (Caldwell and Caldwell 1990; Kayongo-Male and Onyango 1984). Marriage frequently brings together a woman and a man who have greater allegiance to their lineage kin than to each other. The marriage contract is centered on the payment of bridewealth from the groom's family to the bride's family that compensates the bride's family for her future births who become a part of the groom's lineage (Caldwell and Caldwell 1990; Isiugo-Abanihe 1994).⁸ An

6. To some extent, the current state of affairs was forced by a study by Pritchett (1994), which provoked a debate with Bongaarts about the relative merits of supply-demand factors. Bongaarts acknowledged that although family planning had a major impact in the past, significant fertility reductions in the future will depend on increased demand.

7. Whether or not men actually dominate women, it is generally acknowledged that men have some influence on women's reproductive behavior.

8. Even in matrilineal societies, in which children are part of the female spouse's lineage, bridewealth payment is common, as is the influence of males (Nukunya 1992).

implicit outcome of this transaction is that it shifts reproductive decision-making power to the male side. The gendered nature of the division of labor in African society also contributes to women's and men's different cost/benefit calculuses vis-à-vis childbearing (Boserup 1985; Fapohunda and Todaro 1988; Lloyd and Blanc 1995).

Despite this knowledge, most theoretical approaches see the couple as a unified entity with common, shared interests, or as an entity in which women make the relevant decisions (Becker 1981). However, the Transactions Framework sees marriage as a contract between spouses with potentially varying costs and benefits and focuses on the need to consider dissimilar reproductive goals, power differences, and resource exchanges associated with bargaining within marriage (Fapohunda and Todaro 1988). The reproductive decision is then related to power differences between spouses (Beckman 1983; Hollerbach 1983; Safilios-Rothschild 1970).

The male-role argument is based on these gendered differences in costs and benefits of childbearing and child-rearing that then lead to differences in demand for children (Boserup 1985; Fapohunda and Todaro 1988), as well as on power differences in reproductive decision-making that favor men (Caldwell and Caldwell 1990; Dodoo and van Landewijk 1996; Hosken 1984). A growing literature supports these positions and provides evidence of differences between couples in reproductive goals (Dodoo and Seal 1994; Fapohunda and Todaro 1988; Mott and Mott 1985). Even if spouses agree, that agreement may reflect dominance and/or selectivity by men (Ezeh 1993). Further, men's leverage in the reproductive arena is acknowledged by *both* sexes, with women frequently deferring to men in reproductive decision-making (Bongaarts and Bruce 1995; Caldwell and Caldwell 1990; Dodoo et al. 1997; Ezeh 1993; Isiugo-Abanihe 1994; Khalifa 1988; Mustafa and Mumford 1984; Phillips et al. 1997; Watkins, Rutenberg, and Green 1995). Clearly, the male perspective cannot legitimately be excluded from fertility research.

Although in the United States females' intentions may be stronger predictors of fertility behavior than men's intentions (Beckman et al. 1983; Sweet, Bumpass, and Call 1988; Udry 1979; Westoff et al. 1961), the cultural milieu differs significantly in the African context. The extent to which various degrees of consensus determine contraceptive outcomes promises to enhance our understanding of the fertility transition in Africa by documenting the relative importance of women and men in decision-making. This approach highlights whether both partners or only one partner needs to be committed to family planning for contraceptive use to occur. For instance, is it sufficient for a man (or woman) alone to want no more children for contraception to be adopted? Answers to questions such as this remain central to attempts to lower fertility in Africa.

Kenya has received much attention for its pioneer role in the fertility transition in Africa. The decline in fertility in Kenya coincides with the availability of data at two points in time in which males and females were interviewed. This al-

lows me to explore how variations in joint preferences are associated with contraceptive *change*.

DATA, VARIABLES, AND METHODS

I examine data from the 1989 and 1993 Kenya Demographic and Health Surveys (DHS). This period in Kenya marks the largest recorded fertility decline in human history (Population Reference Bureau 1993). Both surveys are nationally representative samples of women that provide data on reproductive preferences and contraceptive use in addition to background information about respondents. The 1993 survey was designed to be a reasonable replication of the earlier investigation in that variables constructed from the later survey are analogous to those from the former survey. A major difference between the two surveys lies in the selection of male respondents. Whereas the earlier survey involved interviewing a randomly selected fraction of the husbands of female respondents, regardless of age, the later study surveyed an independent subsample of men aged 20–54, some of whom can be matched with spouses who were also interviewed. Pairing polygamous men with each of their interviewed spouses produces 1,129 couples in 1989 and 1,259 couples in 1993. A comparison of the two samples of couples over time is hampered by several concerns. First, restricting the selection of males to husbands in 1989 and to certain ages in 1993 raises questions about the representativeness of the samples. Related to this is a concern about whether the two samples are comparable. The age restriction in the later survey results in a relatively younger sample of men (and therefore couples) who should have higher fertility and consequently lower preferences for additional children compared to the 1989 sample.⁹ Although overall levels of contraceptive use increased between the two dates, the younger 1993 sample, being more distant from their fertility goals, exhibits relatively lower levels of contraceptive use than would be predicted by the pace of the Kenyan transition. Whereas the national level of contraceptive use among married women rose by 52% from 17.9% to 27.3% in the period, the increase observed in the two subsamples of couples is less than 12%—from 20.9% to 23.3%.

My primary focus on the *within*-survey relative contributions of men's and women's preferences should moderate concerns about the biases associated with the different sampling techniques. Interest in whether gender effects vary prompts an examination of differences across time. However, any statements about "change" must be tempered by the concerns with sample comparability. A final data manipulation, given my interest in preferences and their effect on contra-

9. In 1993, 21% of the husbands were aged 20–29, while only 9% were age 50 or older. In 1989, only 13% were aged 20–29, whereas 26% were age 50 or older. Only 17.4% of men in 1989 had two or fewer living children, compared to 27.2% in 1993. Similarly, 59% of men in 1989 had at least five living children, compared to 47% of the men in 1993. Not surprisingly, only 34.5% of the men in 1993 wanted no more children compared to 48.6% of the 1989 men (National Council for Population and Development and the Institute for Resource Development 1989, 1994). The fertility preference figures differ slightly from those shown in Table 1 for 1993 because the table is limited to sampled men whose wives were interviewed.

ceptive use, involves the exclusion of respondents declared infecund because, for them, a preference to cease child-bearing may not translate into contraceptive use. After weighting the samples, this exclusion reduces the available dyads to 1,112 couples in 1989 and 1,172 couples in 1993. Eleven men in each sample had two wives interviewed; none had more than two wives interviewed.

Variables

The dependent variable is a binary measure of the current use (versus nonuse) of modern contraception among women. The levels of contraceptive use in the samples are 20.9% in 1989 and 23.3% in 1993. Reproductive preferences are the key independent measures. For both males and females, a trichotomous measure distinguishes respondents who want no more children (those with a need for contraception) from those who are uncertain whether they want children or want children but either want to wait two or more years or are uncertain about timing (those with a spacing need) and from those who want children within two years (no need for contraception).¹⁰ Among women in Kenya, the need to stop childbearing has been identified as a key determinant of contraceptive use (Njogu 1991). Westoff and Bankole (1995) also underscore the significance of spacing in Kenya, where 22.2% of women were characterized as spacers in 1993. Although a desire to use contraception can be overcome by factors such as lack of access or high cost, I assume that the actual use of contraception reflects a conscious choice by users. In this vein, the relationship between men's and women's preferences and contraceptive use should provide insight into the relative influence or power of women and men in reproductive decisions.

Given the interest in the extent to which the inclusion of males' preferences improves the traditional female-centered explanatory model of fertility behavior, control variables for both women and men were selected to reflect demographic and socioeconomic variables known to be associated with contraceptive use. These variables include education, which, for women, is a key variable explaining contraceptive increases in Kenya (Njogu 1991). A three-category measure of education classifies respondents as having no schooling, some primary schooling, or at least some secondary schooling. Age, measured as a continuous variable, has potentially conflicting effects on contraceptive use. While young respondents are probably further from their reproductive goals, they may be less traditional and more accepting of contraceptive technology. Continuous measures of the number of living children for both women and men are included as controls for parity because higher parity individuals are more likely to use contraception (Bankole 1995). Marriage type is a dichotomous variable, coded 1 in monogamous cases and 0 otherwise. Polygamous respondents are less likely to use contraception, partly because they are more likely to practice abstinence (Dow and Werner 1982). Rural-urban residence is a

10. Family-planning programs are predicated on the substantial levels of unmet need indicated among women.

binary variable coded 1 for urban dwellers and 0 for their rural counterparts. Urban areas offer greater access to family-planning and related services (Tuladhar 1985). Region of residence is an important indicator of contraceptive use in Kenya because of the differential prevalence of services across provinces (Njogu 1991).¹¹ Higher incidences of contraception are expected in the better-served regions (Nairobi, Central, and Eastern), therefore a seven-category classification is employed to cover the spectrum of administrative provinces delineated by the two surveys. Individuals who have experienced mortality among their children are expected to be less likely to use contraception, presumably because they want to replace their deceased children (Tuladhar 1985). A report of the number of deceased children is available for women, allowing a continuous measure of child mortality to be included in the study.¹² Respondents were asked the number of times they had discussed family planning with their spouses within the last year, to which they could answer "never," "once or twice," or "more than twice." A three-category variable reflects a consensus that discussion occurred more often than twice; consensus that there had been no discussion; and an intermediate category representing consensus in the middle category, as well as lack of consensus. The interpretation of the discussion effect is tentative because it is unclear whether discussion preceded contraceptive use. Also, the issue of timing is complicated by measuring frequency of discussion for the one-year period before the survey. Furthermore, the actual content or nature of such discussion is not known.¹³

The Analytical Model

The binary dependent variable lends itself to logistic regression analysis (Hanushek and Jackson 1977; Morgan and Teachman 1988). The dependent variable is interpreted as the log odds of modern contraceptive use and is expressed as the sum of the products of regression coefficients (b) and covariate means (x). Thus, for time period t , the log odds are:

$$\text{Logit}(p_t) = \text{Ln}(p_t/[1-p_t]) = \sum b_i x_i.$$

Each regression coefficient can be interpreted as the log odds of the given variable and measures the extent to which the regressor contributes to contraceptive use. Exponentiating the coefficient provides the more easily interpreted odds. For males and females then, the ensuing analysis permits an evaluation of the extent to which having preferences for ceasing childbirth or spacing, respectively, are associated with contraceptive use relative to respondents who indicate no need for contraception because they prefer to have children within two years. The comparison of coefficients for males and females also affords an examination of the rela-

11. In the ensuing regression analyses, the region variable was excluded because preliminary runs indicated that doing so had little effect on the results.

12. Concern that an equivalent measure for men was not available was alleviated when omitting the mortality variable barely changed the regression estimates.

13. An extreme case illustrates this. Does an angry reaction of a male spouse who finds out that his wife has begun using contraception without his knowledge count as "discussion"?

tive influence of gendered preferences. In addition to examining the log odds associated with the preference variables, the analysis examines whether the differences between the effects of females' and males' preferences are statistically significant. Because logit models rely on the large sample property, the z -test (rather than the t -test) is used to assess significance.¹⁴ The examination of joint preferences explores the degree to which various types of gendered agreement vis-à-vis fertility preferences affect contraceptive use, relative to unions in which both spouses want another child in the near future. For instance, if dyads in which men want no more children but their spouses do exhibit significantly higher odds of contraceptive use compared to those in which the women want no more, then it is reasonable to argue that men have more influence in reproductive decisions.

Methodological Concerns

The assessment of preferences and contraceptive use in the African setting entails methodological concerns regarding polygamous men. The preferences of polygamous men are difficult to interpret because it is not clear which wife a stated preference pertains to (Ngom 1996; Speizer and Yates 1996). On the other hand, when a polygamous man wants no more children (as may be discerned from DHS data) there is no ambiguity in his contraceptive need status because nonuse of contraception with even one wife contradicts his stated preference. Because the current DHS does not ask men to index their preferences by spouse, this problem cannot be easily resolved. The best I can do is to compare estimates for the entire sample of couples to those obtained from a monogamous sample. In this study, results from the entire sample and monogamous samples were very similar.

Because not all wives of polygamous men were interviewed, I had to decide whether to match polygamous men with only *one* of their *interviewed* wives, to duplicate male records and match them with each of their wives, or to exclude polygamous couples. Speizer and Yates (1996) examined various adjustments for this problem and concluded that rather than limiting their analysis to monogamous couples or matching polygamous men with one wife, a solution was to match husbands with each of their interviewed wives and then use a technique like generalized estimating equations (GEE) to "correct" the violation of the assumption of independence of observations (underlying maximum-likelihood estimation) associated with repeated (polygamous) male records.¹⁵ In the current analysis, the standard errors and coefficients derived from using GEE were very similar to those derived from the basic logistic regression, probably because each survey contained only 11 polygamous men. Analyses omitting these 11 men provided almost identical estimates.

14. The sampling distribution of logistic coefficients is asymptotically normal, hence I calculate and report z scores for within-sample differences in coefficients for males and females.

15. The GEE method produces robust estimates and standard errors (Liang and Zegler 1986, 1993; Qaqish and El-Moalem 1995; Speizer and Yates 1996).

A final problem regards the question of whether reproductive preferences are exogenous to contraceptive decisions. A concern with endogeneity arises from the fact that the decision of whether to have another child can be made simultaneously with the decision about contraceptive use. Bollen, Guilkey, and Mroz (1995:112) recommend tests for exogeneity, particularly because of the "high price" of correcting this problem. The outcome of the test indicated that two-stage procedures were unnecessary (Bollen et al. 1995; Maddala 1983), and thus I report results from a basic logistic regression model.

RESULTS

Table 1 describes the couples from the two surveys. Contraceptive use is 11.5% higher in the 1993 sample than in the 1989 sample. Men and women are substantially younger in the 1993 sample, reflecting the change in sampling rules between the two surveys. In line with their younger ages, fertility preferences appear more pronatalist in the 1993 survey. Respondents tend to be rural, monogamous, and reasonably well educated, with the 1993 sample exhibiting higher levels of monogamy and education, more family-planning discussion, and a lower incidence of child mortality.

Table 2 presents the relationships between the variables and contraceptive use. Results conform to the general expectations associated with contraceptive differentials: Monogamous, urban, and educated respondents are more likely to use contraception than are polygamous, rural, and uneducated respondents. Previous experience with child mortality is associated with lower contraceptive use. There is substantial variation in the regional distribution of contraceptive use, which probably reflects differences in service availability and fertility demand. Respondents who want no more children and those who discuss family planning more frequently are more likely to use contraception. Note the apparently strong relationship between husband's (versus wife's) preference and contraceptive use, a relationship that is more pronounced in 1993 compared to 1989.

Multivariate Results: The Additive Model

The relationship between gendered preferences and contraceptive use is further investigated in a multivariate model. The typical model includes measures of fertility preference, education, marital status and type, rural-urban residence, child mortality, age, and parity. Traditionally, these measures reflect only women's characteristics. The logistic models extend the traditional female-only model by including measures for males. Because of the plausible correlation between age and parity, Table 3 presents correlations among the age and parity variables. Within-gender correlations between age and parity range from .52 to .73; women's and men's ages have correlations of .66 and .76 in the two samples; and, across-gender correlations of parity are .60 to .64. Concern about multicollinearity therefore dictates a cautious approach to the ensuing regression analysis.

Table 4a presents logistic regression models for 1989; Table 4b presents models for 1993. Logistic regression mod-

TABLE 1. SAMPLE DIFFERENCES IN SELECTED CHARACTERISTICS OF COUPLES IN THE KENYA DEMOGRAPHIC AND HEALTH SURVEY, 1989 AND 1993

Characteristic	Survey	
	1989	1993
Percent Using Contraception	20.9	23.3
Marital Type		
Percent monogamous	78.9	84.9
Percent polygamous	21.1	15.1
Residence Type		
Percent urban	14.8	15.1
Percent rural	85.2	84.9
Region		
Percent Nairobi	6.6	7.0
Percent Central	16.0	13.6
Percent Coast	5.9	7.7
Percent Eastern	19.3	18.8
Percent Nyanza	17.5	12.9
Percent Rift Valley	25.0	25.2
Percent Western	9.8	14.7
Mortality Experience		
Percent none	66.9	72.8
Percent one or more deaths	33.1	27.2
Wife's Education		
Percent none	36.2	22.5
Percent primary	48.3	56.5
Percent secondary	15.5	21.0
Husband's Education		
Percent none	16.6	11.3
Percent primary	54.9	54.4
Percent secondary	28.5	34.2
Wife's Preference		
Percent stopping	56.0	49.1
Percent spacing	31.5	37.7
Percent more children	12.5	13.2
Husband's Preference		
Percent stopping	48.5	40.8
Percent spacing	40.2	37.3
Percent more children	11.3	21.9
Family-Planning Discussion		
Percent none	20.0	1.2
Percent once or twice	55.9	76.1
Percent more often	24.1	22.6
Mean Age of Husband	41.9	36.6
Mean Age of Wife	32.2	29.6

(continued in the next column)

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Characteristic	Survey	
	1989	1993
Husband's Mean Number of Living Children	6.1	4.8
Wife's Mean Number of Living Children	4.7	3.8
Number of Couples	1,112	1,172

els are shown separately for wives and husbands in 1989 and 1993.¹⁶ Consistent with previous research, significant positive effects are found for education, preferences, and urban residence in 1989. Joint Model I includes wives' and husbands' covariates and shows significant, albeit slightly smaller, effects for wives' and husbands' preferences, urban residence, and wives' education. The gendered preference effects are similar in magnitude, with the odds of contraceptive use being 2.5 times higher among spacers (relative to the omitted category of respondents who want children within two years), and 4.3 to 4.7 times higher for female and male stoppers, respectively. There are no significant differences between the coefficients for male and female stopping and spacing preferences. The concern with collinearity led to the estimation of the truncated model—Joint Model II—that excludes age and parity for both sexes. However, the estimates are similar to those for Joint Model I. Joint Model III introduces the family-planning discussion variable and indicates a *possible* effect of family-planning discussion.¹⁷ The magnitudes of the coefficients for preferences hardly change, suggesting that these are *direct* effects. This also suggests that a discussion effect probably does not intervene between preferences and contraceptive use.

Results for 1993 are presented in Table 4b. Although the positive effects of education and preferences remain significant for wives and husbands modeled separately, some interesting differences emerge relative to the 1989 sample. Although not significant in the earlier survey, being in a monogamous marriage increases the likelihood of contraceptive use for wives but not husbands. The effect of urban residence in 1989 is significant only for husbands in the later survey. Previous experience with a child's mortality has a significant negative effect on contraceptive use in 1993. Plausible explanations for these findings can be laid at the doorstep of the rapid changes in Kenyan society. For instance, urbanization may appear significant only for husbands in 1993 because the dramatic spread of contraceptive services, mainly targeted at women, may have reduced constraints for rural women. Like-

16. Preliminary analyses using forward and backward methods to sequentially enter age and parity into the model produced robust estimates and standard errors. Age and parity effects were not significant for women and men in both samples, regardless of whether one or both were entered in the models.

17. The inability to determine the timing of family-planning discussions and contraception makes this interpretation tentative.

TABLE 2. PERCENT USING CONTRACEPTION, BY SELECTED CHARACTERISTICS: KENYA DEMOGRAPHIC AND HEALTH SURVEY

Characteristic	1989 Survey		1993 Survey	
	Percent	N	Percent	N
Marital Type				
Monogamous	22.2	878	25.0	996
Polygamous	16.2	234	13.7	176
Residence				
Urban	33.1	164	35.2	177
Rural	18.8	948	21.2	995
Region				
Nairobi	42.0	73	36.4	83
Central	30.9	178	40.6	159
Coast	11.1	65	17.8	90
Eastern	24.8	214	29.5	220
Nyanza	10.8	195	15.2	152
Rift Valley	19.1	278	13.7	296
Western	11.5	109	19.5	172
Mortality Experience				
None	23.0	745	26.6	854
One or more deaths	16.6	367	14.2	318
Wife's Education				
None	12.2	403	10.6	264
Primary	20.7	537	21.6	662
Secondary	41.9	172	41.4	246
Husband's Education				
None	13.8	185	6.5	133
Primary	15.4	610	19.8	638
Secondary	35.7	317	34.3	401
Wife's Preference				
Stopping	27.0	622	30.3	575
Spacing	16.2	350	18.9	441
More children	5.8	139	9.8	155
Husband's Preference				
Stopping	29.1	539	36.4	466
Spacing	15.1	447	18.2	426
More children	6.2	126	7.9	250
Family-Planning Discussion				
None	4.5	222	9.9	14
Once or twice	17.3	622	17.8	892
More often	43.1	268	42.5	265

wise, the observed negative effect of a child's death may reflect real improvements that can exacerbate the contrast in contraceptive use associated with mortality experience. These speculative explanations require further investigation.

TABLE 3. INTERCORRELATIONS BETWEEN AGE AND PARITY, BY SEX: KENYA DEMOGRAPHIC AND HEALTH SURVEY, 1989 AND 1993

Age and Parity	Age and Parity			
	Women's Age	Men's Age	Women's Living Children	Men's Living Children
1989 Survey				
Women's age	1.00	—	—	—
Men's age	.66	1.00	—	—
Women's living children	.69	.47	1.00	—
Men's living children	.51	.68	.64	1.00
1993 Survey				
Women's age	1.00	—	—	—
Men's age	.76	1.00	—	—
Women's living children	.73	.62	1.00	—
Men's living children	.48	.52	.60	1.00

Most pertinent to the current study is the considerably stronger relative impact of husband's (versus wife's) preference in 1993 (compare Joint Models I and II). Joint Model 1, for example, suggests that whereas husband's stopping preference is associated with odds that are 6.1 times higher than the omitted category, the odds for wife's stopping preference are only 2.3 times higher. Surprisingly, a spacing preference is not associated with significantly higher odds of contraceptive use among wives. The observed differences for husband's and wife's preferences are statistically significant: The z-scores are 2.05 for the sex difference in preference for stopping and 1.18 for the sex difference in spacing preference. As in the 1989 sample, the observed preference effects remain significant across the joint models presented in Table 4b. The complete absence of an effect for family-planning discussions in 1993 also raises questions about the importance of discussion in reproductive decisions.

Joint Preferences

Given the inherent jointness of reproductive decisions, I empirically examine how the additive estimates of wife's and husband's preferences combine into an interactive measure. Dodoo et al. (1997) propose an exhaustive nine-category measure of joint preferences—and contraceptive need—that cross-references the three levels of preference for both spouses. Table 5 presents the distribution of couples across this joint-preference measure, as well as the corresponding estimates of contraceptive use in each survey. The sparseness of couples in some of the categories weakens the interpretation of the preference-behavior outcome. Across samples, a ranking of joint-preference categories places couples in which both spouses want to cease

TABLE 4A. LOGIT COEFFICIENTS FOR REGRESSION OF CONTRACEPTIVE USE ON SELECTED INDEPENDENT VARIABLES: KENYA DEMOGRAPHIC AND HEALTH SURVEY, 1989

Independent Variable	Wives Only	Husbands Only	Joint Models		
			I	II	III
Intercept	-4.364** (.606)	-3.209** (.654)	-4.292** (.805)	-4.532** (.567)	-5.907** (.897)
Monogamous Marriage	.076 (.208)	.217 (.242)	-.198 (.284)	.043 (.213)	-.117 (.298)
Urban Residence	.637** (.222)	.595** (.214)	.539* (.232)	.507* (.226)	.721** (.241)
Experienced Child's Death	-.085 (.095)	-.102 (.093)	-.043 (.096)	-.043 (.093)	.009 (.099)
Wife's Education					
Primary	.785** (.201)	—	.544* (.214)	.523* (.207)	.429 (.221)
Secondary	1.869** (.259)	—	1.420** (.295)	1.381** (.286)	1.067** (.305)
Husband's Education					
Primary	—	.016 (.258)	-.193 (.267)	-.139 (.259)	-.338 (.279)
Secondary	—	1.033** (.275)	.483 (.303)	.539 (.292)	.301 (.315)
Wife's Preference					
Spacing	1.084** (.403)	—	.949* (.408)	.984* (.405)	.935* (.421)
Stopping	1.844** (.401)	—	1.472** (.412)	1.582** (.402)	1.422** (.428)
Husband's Preference					
Spacing	—	.948* (.401)	.955* (.410)	.877* (.395)	.879* (.425)
Stopping	—	1.932** (.399)	1.557** (.418)	1.532** (.398)	1.222** (.434)
Wife's Age	.014 (.015)	—	.012 (.020)	—	.026 (.021)
Husband's Age	—	-.006 (.011)	-.013 (.014)	—	-.008 (.014)
Wife's Number of Living Children	.046 (.044)	—	.065 (.058)	—	.041 (.062)
Husband's Number of Living Children	—	.014 (.029)	.025 (.041)	—	-.007 (.044)
Family-Planning Discussion					
Once or twice	—	—	—	—	1.060** (.356)
More often	—	—	—	—	2.248** (.371)
-2 Log-Likelihood	1,011.23	1,019.02	972.13	977.11	907.35
Model Chi-Square	129.99	119.07	166.06	164.11	230.85
Degrees of Freedom	9	9	15	11	17
Number of Cases	1,112	1,110	1,110	1,112	1,110

Note: Numbers in parentheses are standard errors. Omitted categories are Marriage Type (polygamous); Residence (rural); Education (none); Preferences (respondents who want more children and those who are uncertain).

* $p < .05$; ** $p < .01$

TABLE 4B. LOGIT COEFFICIENTS FOR REGRESSION OF CONTRACEPTIVE USE ON SELECTED INDEPENDENT VARIABLES: KENYA DEMOGRAPHIC AND HEALTH SURVEY, 1993

Independent Variable	Wives Only	Husbands Only	Joint Models		
			I	II	III
Intercept	-4.114** (.586)	-4.294** (.666)	-5.098** (.794)	-4.737** (.532)	-6.032** (1.273)
Monogamous Marriage	.691** (.248)	.503 (.262)	.580* (.276)	.596* (.259)	.490 (.276)
Urban Residence	.396 (.203)	.577** (.205)	.399 (.215)	.474* (.210)	.400 (.218)
Experienced Child's Death	-.464** (.125)	-.476** (.126)	-.435** (.128)	-.431** (.124)	-.432** (.129)
Wife's Education					
Primary	.799** (.244)	—	.446 (.257)	.466 (.245)	.390 (.260)
Secondary	1.686** (.272)	—	1.226** (.304)	1.305** (.293)	1.148** (.308)
Husband's Education					
Primary	—	1.133** (.383)	.833* (.397)	.800* (.393)	.814* (.400)
Secondary	—	1.785** (.391)	1.145** (.419)	1.105** (.414)	1.009* (.423)
Wife's Preference					
Spacing	.662* (.311)	—	.320 (.324)	.223 (.319)	.243 (.326)
Stopping	1.447** (.318)	—	.855* (.334)	.723* (.317)	.723* (.338)
Husband's Preference					
Spacing	—	.810** (.254)	.856** (.266)	.841** (.264)	.827** (.267)
Stopping	—	1.957** (.255)	1.820** (.270)	1.772** (.263)	1.758** (.272)
Wife's Age	.016 (.016)	—	.011 (.020)	—	.011 (.020)
Husband's Age	—	.009 (.013)	.007 (.016)	—	.012 (.016)
Wife's Number of Living Children	.004 (.049)	—	-.067 (.056)	—	-.075 (.057)
Husband's Number of Living Children	—	-.029 (.025)	-.012 (.027)	—	-.007 (.026)
Family-Planning Discussion					
Once or twice	—	—	—	—	.902 (.941)
More often	—	—	—	—	1.646 (.947)
-2 Log-Likelihood	1,127.89	1,090.24	1,055.03	1,058.61	1,034.63
Model Chi-Square	143.76	179.55	214.76	213.04	235.16
Degrees of Freedom	9	9	15	11	17
Number of Cases	1,172	1,168	1,168	1,172	1,168

Note: Numbers in parentheses are standard errors. Omitted categories are Marriage Type (polygamous); Residence (rural); Education (none); Preferences (respondents who want more children and those who are uncertain).

* $p < .05$; ** $p < .01$

TABLE 5. PERCENT DISTRIBUTION AND PERCENT USING CONTRACEPTION, BY JOINT PREFERENCES: KENYA DEMOGRAPHIC AND HEALTH SURVEY, 1989 AND 1993

Joint Preference	1989 Survey			1993 Survey		
	Percent Distribution	Percent Using Contraception	N	Percent Distribution	Percent Using Contraception	N
Both Want to Stop	39.8	31.5	442	30.7	39.2	350
Wife Wants to Space, Husband Wants to Stop	6.6	23.1	73	8.9	31.2	102
Wife Wants a Child, Husband Wants to Stop	2.1	3.6	23	1.2	3.4	14
Wife Wants to Stop, Husband Wants to Space	13.1	17.5	145	11.7	23.2	134
Both Want to Space	19.7	16.8	218	21.0	16.3	240
Wife Wants a Child, Husband Wants to Space	7.4	6.6	82	4.6	14.2	53
Wife Wants to Stop, Husband Wants a Child	3.1	8.4	34	6.1	2.2	69
Wife Wants to Space, Husband Wants a Child	5.2	5.5	58	8.5	11.6	97
Both Want a Child	3.0	5.2	34	7.4	8.5	85
Number of Couples		1,110			1,143	

childbearing at the top, followed by those who both want to space, and couples in which the wife wants no more children but the husband wants to space. The category in which the wife wants a child within two years but the husband wants to stop has the lowest percentage of dyads.

A ranking of the joint-preference categories by level of contraceptive use is also similar across the two samples, and is highest when both partners want to stop. The next highest levels of contraceptive use—in order—occur when husbands want to stop but wives want to space, when wives want to stop but husbands want to space, and when both want to space. Again it appears that husbands' preferences are more important for increasing contraceptive use than are those of wives. Does this finding hold when other relevant covariates are considered?

Table 6 presents regression estimates for the joint-preference measure: Model I omits controls, and Model II includes control variables. Results provide further support for the male-advantage hypothesis, particularly in 1993. In 1989, it appears *both* partners must want to cease childbearing for a significant effect on contraceptive use to exist. In the younger 1993 sample, although the same category has the strongest effect on contraceptive use, a preference for spacing for either spouse coupled with a preference for stopping for the other spouse also increases the likelihood of contraceptive use: The odds are roughly 50% higher ($b = 1.587$ versus 1.199) when it is the husband rather than the wife who wants to cease childbearing.

DISCUSSION

I set out to explore the relative impact of husbands' and wives' preferences on contraceptive use. Perhaps the most striking finding to emerge is the extent to which contraceptive use increases when *both* spouses want no more children. Although this is a very logical association between consen-

sus and behavior, the magnitude of the empirical estimates has implications. Simply stated, the preferences of *men* as well as women are crucial to the success of population policies, suggesting that policies would benefit if men have favorable reproductive inclinations. In fact, the later (1993) survey documents an apparent stronger effect of husbands' preferences. Although the reproductive decision is a joint one, the additive models provide estimates of the relative magnitudes of gendered preferences that indicate that in 1993 contraception is two to three times more likely to be used when husbands rather than wives want to cease childbearing. Unfortunately, it is not possible to determine conclusively whether the difference in gendered preference effects between 1989 and 1993 signals a *real* emerging trend towards male dominance in reproductive decisions, represents a (lagged) crystallization of an existing male advantage, or simply reflects differences in the sample selection procedures. A sample selectivity explanation might argue that men would have more influence among the younger (1993) couples who are presumably at an earlier stage of family-building. Indeed, Bankole (1995) found that men have relatively more influence than women in decisions at lower parities.

Similarly, although fertility decline can be unrelated to interspousal communication when male dominance is prevalent (Karra, Stark, and Wolf 1997), the sample selectivity toward younger couples could explain the lack of an effect for family-planning discussions in 1993. If, for instance, discussion about family planning does not precede, but rather is provoked by, contraceptive use, then there need not be a relationship between the two variables if couples agree about use or one partner dominates decision-making. These conditions may be more salient among the younger couples in the 1993 sample for whom fertility decisions are more urgent. Even when family-planning discussion has a significant effect (in 1989), its inability to weaken the preference effect

TABLE 6. LOGIT COEFFICIENTS FOR REGRESSIONS OF CONTRACEPTIVE USE ON JOINT PREFERENCES: KENYA DEMOGRAPHIC AND HEALTH SURVEY, 1989 AND 1993

Joint Preference	Model I (No Controls)		Model II (Includes Controls)	
	1989	1993	1989	1993
Both Want to Stop	1.578** (.537)	1.740** (.337)	1.916** (.655)	2.235** (.385)
Wife Wants to Space, Husband Wants to Stop	1.099 (.597)	1.422** (.383)	1.275 (.699)	1.587** (.413)
Wife Wants a Child, Husband Wants to Stop	-1.061 (1.147)	-.494 (1.083)	-.584 (1.223)	-.205 (1.114)
Wife Wants to Stop, Husband Wants to Space	.740 (.569)	.893* (.380)	1.070 (.672)	1.199** (.413)
Both Want to Space	.577 (.557)	.431 (.364)	.716 (.654)	.422 (.385)
Wife Wants a Child, Husband Wants to Space	-.747 (.736)	.396 (.498)	-.574 (.817)	.384 (.521)
Wife Wants to Stop, Husband Wants a Child	-.027 (.745)	-1.898 (1.058)	.456 (.840)	-1.926 (1.073)
Wife Wants to Space, Husband Wants a Child	-.288 (.703)	-.132 (.489)	-.232 (.789)	-.151 (.511)

Note: Numbers in parentheses are standard errors. The omitted category is "both want a child within two years." Model II includes controls for marriage type, urban-rural residence, education, age, previous mortality experience, and parity.

* $p < .05$; ** $p < .01$

suggests that discussion occurs after contraceptive use. However, a case can also be made that discussion precedes the formation of a preference. An alternative explanation may be found in the prevalence of discussion among the younger 1993 couples—only 1.2% of the 1993 couples did not discuss family planning in the year leading up to the survey. This indicates considerably more variance in the discussion variable in 1989.

The analysis of joint preferences further reveals the significance of husbands (and wives) in reproductive decisions. Research has shown that women who want no more children are the most likely to use contraception in Kenya (Njogu 1991). The finding that a wife's preference for stopping childbearing does not translate into increased contraceptive use when the husband wants more children emphasizes the relevance of men. Of course, the same is true for women. How can these findings be reconciled with other findings that credit contraceptive use and fertility changes to females' preferences? Perhaps what has been conceptualized as a wholly female effect is, to a large extent, a male effect. Ezech (1993) discusses the mechanisms that, in the absence of measures for men, could make the effects of husbands' preferences appear as the effects of wives' preferences. One possibility is that husbands assert their preferences through dominance. Another possibility is that men select spouses whose preferences are either similar or pliable.

Several implications follow from these findings. At a general research and policy level, more must be done to understand the inclinations, preferences, and behavior of men. Unfortunately, even scholars who acknowledge a male role often prescribe (along with making family planning amenable to male needs) improvements in the situation of women (e.g., schooling) or in male-female communication, as means of enhancing the outcomes of women's negotiations with men, without addressing men's fertility demands (Bongaarts and Bruce 1995; Phillips et al. 1997). Implicit here is the hint of a female right usurped by men. If, however, the reproductive decision is, by cultural right, a man's decision and men's fertility preferences are high, then it is unclear how effective the independent status of women or an improvement in communication will be (Karra et al. 1997).¹⁸ Clearly, we must investigate the bases of reproductive decision-making power, as well as the determinants of men's preferences. The comparable levels of contraceptive use reported among men relative to women implies an ability to affect use when motivation exists (Ezech 1997). Some attention should be paid to, for instance, the empirical assessment of men's relative costs and benefits associated with childbearing and childrearing.

18. This should not be construed as supporting the termination of endeavors that promote the status of women. Such improvements are of fundamental importance even for the most basic development goals.

Contrary to conventional wisdom, a high proportion of men in Kenya want to cease childbearing. This fact alone demands attention. In the African context, it is not difficult to understand why when men want no more children there is a larger effect on contraceptive use than when their female counterparts want no more children. Why do so many men in Kenya want no more children? The findings also call for more work among reproductive pairs, who need not be spouses (Dodoo 1993a; Dodoo and van Landewijk 1996). The dominance/selection theses postulated by Ezeh (1993) should be examined. Likewise, a study of how disagreements over reproductive goals are resolved can provide further evidence about the male role. The dynamic of the decision-making process—if, when, and how spousal communication factors into this dynamic—should also be explored. If men have higher reproductive goals than women, can improved spousal communication “bring men around” if men’s motivation is not addressed? How do men’s preferences influence women’s behavior when there is no discussion about such issues? In a social context in which lineage ties may be stronger than conjugal ties and sex is not a favorite topic of discussion across gender lines, how are attitudes communicated? The evidence regarding family-planning discussion in this study was inconclusive, raising questions about the content of discussion as well as its timing vis-à-vis contraceptive use. It is apparent from the lack of success of fertility policies in sub-Saharan Africa that much remains to be understood. In this continuing process, it is imperative that the roles of men be brought into the mainstream.

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