Determinants of Contraceptive Switching Behavior in Egypt

By

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1. INTRODUCTION

Most studies of contraceptive use focus on prevalence and the socioeconomic correlates of the methods that are accepted by individual women. Now that family planning programs have been in place long enough for repeated studies of the same populations, research consideration has shifted to trends in prevalence and differentials. These trends aggregate the contraceptive histories of individual women, but their underlying factors cannot be understood by examining only the prevalence patterns at sequential points of time. A key question for study is whether method use observed in a cohort of continuously married couples is largely constant across episodes or responds to changes in fertility demand and contraceptive use experience.

In this study we shall examine the relative influence of determinants of method change among Egyptian women over a 4-year interval. More specifically , the study will examine the following points:
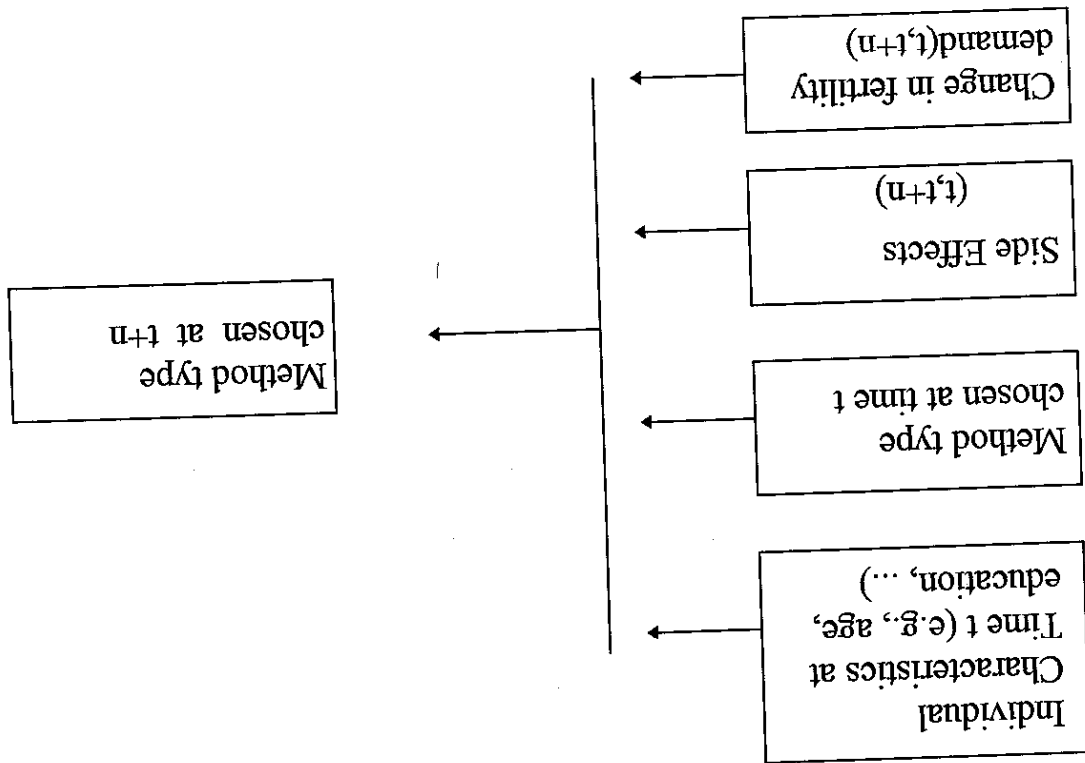
1- Level of contraceptive use among currently married women by some socioeconomic characteristics.

2- Determinants of contraceptive switching behavior within a 4-year interval.

The guiding framework that is used in this study depends on the work of Hamill, Tsui, and Thapa (1990). They found that the contraceptive method that was chosen by a woman at a particular point in time may be viewed as determined by her evaluation of the following:

1- the number of present and additional children she desires,
2- her knowledge and belief regarding her present and future fecundity, and

3- her knowledge and belief about contraceptive methods, their effectiveness, availability, and side effects.

The relationships between the model components are shown in the following chart.

Individual Characteristics at Time t (e.g., age, education, ...)

Method type chosen at time t

Side Effects (t,t+n)

Change in fertility demand(t,t+n)

Method type chosen at t+n

Five alternative methods are identified: 1-No Method, 2-Other Methods, 3- Pill; 4- IUD; and 5- Female Sterilization. Switching from sterilization to other alternative methods is impossible, so that separate models are fitted for four of the five origin methods. The logistic regression technique is applied in this study to estimate the probability of switching from each method.

Data obtained from the 1992 Egypt Demographic and Health Survey (EDHS), are used in the study.

2. THE STUDY POPULATION

Contraceptive history is the most appropriate tool to analyze switching behavior. In the 1992 EDHS, data on the contraceptive behavior of each woman were traced monthly for more than five years before the date of interview. We describe each women's contraceptive history by specifying her method of choice at two points in time (including no method). We will refer to these as her "Origin (January, 1989)" and "Destination (late 1992, the date of interview)" methods. The period between these time points, which we will call "switching period" is approximately 4 years and it must be mentioned here that the extreme limits are excluded because they usually have a small number of cases. Women who were not married in between these two points of time were excluded from the analysis. The total number of women included in the analysis is 7839.

3. METHOD MIX

The method mix among users gives details on users of contraception according to specific method used. As shown in Table 1 and Table 2, the percentage of women using no method decreased from 62.0 to only 50.4. The percent of women using the IUD increased from 16.9 to 27.5 over the same period. There was a small decrease in the percentage using the pill (from 15.1 percent in 1989 to 14.6 percent in 1992). The percent of women using injection, condom, sterilization, safe period, and withdrawal increased while the percent of women practicing prolonged breastfeeding decreased within the switching period. Generally, the percent using other methods (rather than pill and IUD) increased from 6.0 to 7.5. (See also Figure 1).

Table (1)

Method Mix for Married Women in 1989 and 1992, Egypt

Method Type	Year		Absolute Change	Percent Change
	1989	1992		
No Method	62.0	50.4	-11.6	-18.7
Pill	15.1	14.6	-0.5	-3.3
IUD	16.9	27.5	+10.6	+62.7
Injections	0.3	0.7	+0.4	+133.3
Vaginal	0.4	0.4	0.0	0.0
Condom	1.9	2.2	+0.3	+15.8
Sterilization	0.9	1.4	+0.5	+55.6
Periodic Abstinence	0.9	0.9	0.0	0.0
Withdrawal	0.5	0.9	+0.4	+80.0
Breastfeeding	1.1	0.9	-0.2	-18.2
Other Methods	0.1	0.1	0.0	0.0
Total	100	100		
Index of Dissimilarity*	12.3			
Number of Women	7839			

Source: Calculated from the 1992 EDHS, using Contraceptive History Data.

* Index of Dissimilarity= $\text{Sum} \mid (p1-p2) \mid / 2$

where :
p1=percent of users in 1989 for specific method, and
p2=percent of users in 1992 for specific method.

4. DESCRIPTION OF SWITCHING PATTERNS

In this section we trace the pattern of switching that is practiced by the study population within the switching period. As shown in Table 2, the origin and destination method are crosstabulated. For each origin method, destination methods are determined. Let us now study them method by method from two points of view: origin methods by destination methods and destination methods by origin methods;

a) Origin Methods by Destination Methods

No Method: 68.5 percent of non-users in 1989 were reported as non-users in 1992 also, while 18.2 percent of them switched to IUD, 10.0 percent to pill, and 3.3 percent switched to other methods, specially condom and prolonged breastfeeding (See Table 3a).

Pill: 47.2 percent of pill users in 1989 were reported as pill users in 1992 (non switchers), (see Table 3b), while 24.9 percent stopped using any method, 23.0 percent switched to IUD, 1.7 percent switched to condom, 1.1 percent switched to sterilization, and 2.1 percent switched to other methods.

IUD: 71.5 percent of IUD users in 1989 were reported as IUD users in the destination point of time, while 17.9 percent switched to non use, 5.5 switched to pill, 2 percent switched to condom, and 3.1 percent switched to other methods.

Injection: Out of injection users in 1989, 45.5 percent continued to use the same method, 22.7 percent switched to non use, 9.1 percent switched to pill, 18.2 percent switched to IUD, and 4.5 percent switched to other methods.

Vaginal: 46.4 percent continued to use vaginal methods, while 28.6 switched to non use, 7.1 percent switched to pill, 10.7 percent switched to IUD, and 7.2 switched to other methods.

Condom: 59.7 percent of originally condom users continued to use it, while 22.1 percent to non use, 12.1 percent switched to IUD, 2.0 percent switched to pill, and 4.1 switched to other methods.

Other Methods: Most of the users of other methods switched to non use, pill, or IUD. These methods are short-run methods and less effective ones than pill and IUD.

b) Destination Methods by Origin Methods

No Method: 84.2 percent of non users in 1992 were reported as non users in 1989, while 7.5 percent of them were switching from pill, and 6.0 percent from IUD.

Pill: 42.6 percent of pill users in 1992 were reported as nonusers in 1989, while 48.9 percent were reported as pill users, and 6.4 percent from IUD.

IUD: 41.0 percent of IUD users in 1992 were reported as nonusers in 1989, while 12.6 percent were reported as pill users, and 44.0 percent from IUD.

Injection: 45.1 percent of injection users in 1992 were reported as nonusers in 1989, while 13.7 percent were reported as pill users, 19.6 percent from injection, and 17.6 percent from IUD.

Vaginal: 22.9 percent of users of vaginal methods in 1992 were reported as nonusers in 1989, while 11.4 percent were reported as pill users, 5.7 percent from condom, and 22.9 percent from IUD.

Condom: 19.7 percent of condom users in 1992 were reported as pill users, while 11.6 percent were reported as pill users, 51.4 percent from condom and 15.6 percent from IUD.

Other Methods: Most of users of other methods were coming from non use, pill, or IUD.

The switching patterns using grouped methods are described graphically in Figure 2.

Table (2)
Switching Streams by Origin (1989) and Destination (1992) Methods, Egypt 1989-1992

Count / Row Pct / Col Pct

Origin \ Destination Method, 1992	No Method	Pill	IUD	Injection	Vaginal	Condom	Ster.	Safe Period	Withd-rawal	Breast-Feeding	Other	Total
No Method	3328 / 68.5 / 84.2	487 / 10.0 / 42.6	886 / 18.2 / 41.0	23 / 0.5 / 45.1	8 / 0.2 / 22.9	34 / 0.7 / 19.7	24 / 0.5 / 21.6	10 / 0.2 / 13.7	19 / 0.4 / 27.9	34 / 0.7 / 50.7	4 / 0.1 / 57.1	4857 / 100
Pill	295 / 24.9 / 7.5	559 / 47.2 / 48.9	272 / 23.0 / 12.6	7 / 0.6 / 13.7	4 / 0.3 / 11.4	20 / 1.7 / 11.6	13 / 1.1 / 11.7	6 / 0.5 / 8.2	5 / 0.4 / 7.4	3 / 0.3 / 4.5	1 / 0.1 / 14.3	1185 / 100
IUD	238 / 17.9 / 6.0	73 / 5.5 / 6.4	949 / 71.5 / 44.0	9 / 0.7 / 17.6	8 / 0.6 / 22.9	27 / 2.0 / 15.6	2 / 0.2 / 1.8	11 / 0.8 / 15.1	7 / 0.5 / 10.3	2 / 0.2 / 3.0	1 / 0.1 / 14.3	1327 / 100
Injection	5 / 22.7 / 0.1	2 / 9.1 / 0.2	4 / 18.2 / 0.2	10 / 45.5 / 19.6				1 / 4.5 / 1.4				22 / 100
Vaginal	8 / 28.6 / 0.2	2 / 7.1 / 0.2	3 / 10.7 / 0.1	1 / 3.6 / 2.0	13 / 46.4 / 37.1			1 / 3.6 / 1.4				28 / 100
Condom	33 / 22.1 / 0.8	3 / 2.0 / 0.3	18 / 12.1 / 0.8		2 / 1.3 / 5.7	89 / 59.7 / 51.4	1 / 0.7 / 0.9	1 / 0.7 / 1.4	2 / 1.3 / 2.9			149 / 100
Ster.							71 / 100 / 64.0					71 / 100
Safe Period	8 / 11.8 / 0.2	5 / 7.4 / 0.4	9 / 13.2 / 0.4	1 / 1.5 / 2.0		1 / 1.5 / 0.6		42 / 61.8 / 57.5	1 / 1.5 / 1.5	1 / 1.5 / 1.5		68 / 100
Withdrawal	6 / 14.3 / 0.2		2 / 4.8 / 0.1						34 / 81.0 / 50.0			42 / 100
Breast-Feeding	30 / 35.7 / 0.8	10 / 11.9 / 0.9	14 / 16.7 / 0.6			2 / 2.4 / 1.2		1 / 1.2 / 1.4		27 / 32.1 / 40.3		84 / 100
Other	2 / 33.3 / 0.1	1 / 16.7 / 0.1	2 / 33.3 / 0.1								1 / 16.7 / 14.3	6 / 100
Total	3953 / 100	1142 / 100	2159 / 100	51 / 100	35 / 100	173 / 100	111 / 100	73 / 100	68 / 100	67 / 100	7 / 100	7839 / 100.0

Source: Calculated from the 1992 EDHS, using Contraceptive History Data.

Note: Numbers in each cell are respectively - No. of women in the cell, row percent, & column percent.

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Table (3)
Switching to Particular Methods and Vice Versa

(a) No Method

Stream		No Method	Pill	IUD	Inject.	Vaginal	Condom	Ster.	Safe Period	Withdra-wal	Breast fd.	Other	Total
From	n	3328	487	886	23	8	34	24	10	19	34	4	4857
	%	68.5	10.0	18.2	0.5	0.2	0.7	0.5	0.2	0.4	0.7	0.1	100
To	n	3328	295	238	5	8	33	8		6	30	2	3953
	%	84.2	7.5	6.0	0.1	0.2	0.8	0.2		0.2	0.8	0.1	100

(b) Pill

Stream		No Method	Pill	IUD	Inject.	Vaginal	Condom	Ster.	Safe Period	Withdra-wal	Breast fd.	Other	Total
From	n	295	559	272	7	4	20	13	6	5	3	1	1185
	%	24.9	47.2	23.0	0.6	0.3	1.7	1.1	0.5	0.4	0.3	0.1	100
To	n	487	559	73	2	2	3	5			10	1	1142
	%	42.0	48.9	6.4	0.2	0.2	0.3	0.4			0.9	0.1	100

(c) IUD

Stream		No Method	Pill	IUD	Inject.	Vaginal	Condom	Ster.	Safe Period	Withdra-wal	Breast fd.	Other	Total
From	n	238	73	949	9	8	27	2	11	7	2	1	1327
	%	17.9	5.5	71.5	0.7	0.6	2.0	0.2	0.8	0.5	0.2	0.1	100
To	n	886	272	949	4	3	18	9	14	2	2		2159
	%	41.0	12.6	44.0	0.2	0.1	0.8	0.4	0.6	0.1	0.1		100

Source: Calculated from the 1992 EDHS, using Contraceptive History Data.

5. SWITCHING RATES (GAIN AND LOSS)

The gain and loss of each contraceptive method measured by number of the users and switchers to and from, in addition to switching rates are given in Table 4 and Figure 3.

No Method gained 625 women from other methods and lost 1529 women who switched to other methods. The net switching rate is -20.5 percent. Most of No Method gain comes from pill and IUD (295 from pill, and 238 from IUD), meaning that a substantial number of women using these methods cease not to use it

IUD gained 1210 women from other methods and lost 378 women who changed to other methods. The net gain is 832 women representing a net switching rate of +47.7%. Pill gained 583 and lost 626 users. The net loss is 43 women representing a net switching rate of -3.7%.

The net switching rate of injections (+79.4%) is the highest among modern methods, but its magnitude is very minor. Switching to injections may be due to a compaign for encouraging and promoting the use of the injectable as an effective family planning method.

Switching rates from and to condom are relatively high (37.3 versus 52.2) but the net switching rate is moderate (+14.9). The attitudes toward male contraceptives may affected these results. Switching to more effective methods is noticeable. The net switching rate to sterilization is +44.0.

Inspite of the small magnitude of the number of women using breastfeeding , data showed that there is a tendancy to switch from breastfeeding as a family planning method. The rate of changing from breastfeeding is the highest among all (75.5%). The net switching rate is -22.5%. This may be due to unwanted pregnancies that occur while breastfeeding encourages women to use more effective methods.

Table (4)

Switching Rates by Method Type, Egypt, 1989-1992

Method Type	1989 Users	1992 Users	Number of Switchers			Switching Rates		
			To	From	Net	To	From	Net
No Method	4857	3953	625	1529	-904	14.2	34.7	-20.5
Pill	1185	1142	583	626	-43	50.1	53.8	-3.7
IUD	1327	2159	1210	378	+832	69.4	21.7	+47.7
Injections	22	51	41	12	+29	112.3	32.9	+79.4
Vaginal	28	35	22	15	+7	69.8	47.6	+22.2
Condom	149	173	84	60	+24	52.2	37.3	+14.9
Sterilization	71	111	40	0	+40	44.0	0.0	+44.0
Periodic Abstinence	68	73	31	26	+5	44.0	36.9	+7.1
Withdrawal	42	68	34	8	+26	61.8	14.5	+47.3
Breastfeeding	84	67	40	57	-17	53.0	75.5	-22.5
Other Methods	6	7	6	5	+1	92.3	76.9	+15.4
Number of Women	7839	7839	2716	2716	0			

Source: Calculated from the 1992 EDHS, using Contraceptive History Data.

Note: Switching rate = No. of switchers/Average users of 1989 & 1992.

Non-Switching

The diagonal cells of Table (2) represents the numbers of women that keep the same contraceptive method at the two points of time, that is at the origin point in 1989 and at the destination point in 1992. These gives an indication about which contraceptive methods are largely prevailing and which are in rare use as shown in the following table:.

Number of Women Not Switching Between 1989 and 1992

Method Type	No Method	Pill	IUD	Injection	Vaginal	Condom
No.	3328	559	949	10	13	89
Pct	65.0	10.9	18.5	0.2	0.3	1.7

Method Type	Ster.	Safe Period	Withdrawal	Breast fd.	Other	Total
No.	71	42	34	27	1	5123
Pct	1.4	0.8	0.7	0.5	0.0	100

6. DETERMINANTS OF CONTRACEPTIVE SWITCHING

In this section multiple regression analysis is employed to analyze the determinants of contraceptive switching. Separate models are fitted for each origin contraceptive method (or group of methods) as follows:
- Female Sterilization,
- IUD,
- Pill,
- Other methods, and
- No Method.

As previously mentioned, it is not possible to fit a model of switching for women who originated with female sterilization. The dependent variable in each model is destination method. The switch from

each origin method to each destination method is determined by selected explanatory variables:

1. Proportional Change in Family size Deficit, or Change in Fertility Demand (CFD),
2. Side effects of method (Side),
3. Woman's age in years (Age),
4. Woman's years of education(Educ), and
5. Woman's place of residence(URBRUR).

The first two variables, CFD and Side, are dynamic variables. Age, and Education are static individual characteristics known to influence method choice significantly (Hamill, et al, 1990). The last variable (URBRUR) reflects the impact of living style on contraceptive switching.

Measurement of the Variables

Hamill, et al (1990) developed a method to calculate the proportional change in family size deficit. Change in fertility demand is calculated from a woman's number of living children (LC) at the end of the switching period (the date of interview), desired family size (DFS) at that time, and births (B) and deaths (D) during the switching period. Family size deficit (FSD) is an estimate of the number of additional children desired at the beginning of the switching period:

$$FSD = DFS - (LC - B + D)$$
$$= DFS - LC + (B-D)$$

For women who desired no additional children at the start of the switching period, CFD is zero. For those who desired additional children, CFD represents the proportion of those children gained prior to a method switching, occurring during the entire switching period. If desired family size is attained, CFD equals 1. Hence

$$CFD = 0 \quad \text{if } FSD \leq 0, \text{ or } B - D \leq 0,$$

$$CFD = (B-D) / FSD \quad \text{if } 0 < B - D < FSD,$$

$$CFD = 1 \quad \text{if } B - D \geq FSD.$$

It is hypothesized that switching from less to more reliable methods will be directly related to fulfillment of fertility demand in the switching period.

Side effects are one of the important factors that force women to change their method or, in some cases, to stop using any method. Thus we expect that women who experienced side effects within the switching period will switch to more convenient and effective methods.

Woman's age is a covariate of method choice. Women's education is also likely to be correlated with method choice . It is measured in single years. Place of residence reflects the effect of norms, traditions, and life style which affect in turn method choice also. Table (6) describes all the variables that are used in the regression analysis by method type at the origin point, and Table (5) describes the categories of each variable.

Table (5)
Description of Regression Variables

Variables	Code	Description	Value Labels
Dependent Variable		Method Type Used in 1992	0. Same as origin method 1. Differs from origin method
Independent Variables	CFD	Change in Fertility Demand	
	Age	Age of Women in Single Years	
	URBRUR	Place of Residence	0. Rural (reference category), and 1. Urban
	Side	Side Effects of Origin Method	0. No Side Effects (reference category), and 1. Experienced Side Effects.
	Educ	Years of Education	

Table (6)
Means of Independent Variables by Origin Method Type

	Origin Method Type					Total
	No Method	Other Methods	Pill	IUD	Female Ster.	
URBRUR	0.37	0.70	0.59	0.68	0.56	0.47
Age	32.7	37.5	35.5	35.7	42.4	34.0
Educ	3.1	6.5	3.8	6.0	3.3	3.9
CFD	0.76	0.91	0.93	0.90	0.86	0.82
Side	NA	0.08	0.29	0.21	0.0	0.08

NA = Not Applicable

Regression Models

As was mentioned before, separate models are fitted for each origin method. The dependent variable in each model has only two possible outcomes taking values of (0) in the case of non-switching and (1) in the case of switching to any other method other than the original one. The probability of switching is expressed by the logistic model as follows:

$$P = \frac{e^Z}{1+e^Z}$$

Where:

P = Probability of Switching, and
Z = Is a linear function of one or more independent variables.

The value of Z is determined by the following equation:

$$Z = a + b_1 \text{CFD} + b_2 \text{Age} + b_3 \text{Educ} + b_4 \text{URBRUR} + b_5 \text{Side} + e$$

Where:

CFD	=	change in fertility demand
Age	=	age in single years,
Educ	=	years of education,
URBRUR	=	type of place of residence (1=Urban/0=Rural),
Side	=	side effects(0=No Side Effects/1=Experienced Side Effects),
a	=	constant,
b_i	=	regression coefficients, and
e	=	error term.

For no method category, the model is reduced to:

$$Z = a + b_1 \text{CFD} + b_2 \text{Age} + b_3 \text{Educ} + b_4 \text{URBRUR} + e$$

Results of Logistic Regression

Interest is not only directed to which variable significantly affects method switching but also in the nature of those effects and the relative importance of explanatory variables. The means of the method groups are shown in Table (6) and the regression coefficients for each model are given in Table (7). The results of regression analysis are displayed in a set of graphs (fig. 4 to 7), each showing the effects of a single explanatory variable on probabilities of method switching.

For example, Figure 4d shows the effects of a change in fertility demand (CFD) on switching probabilities for women who began with No method. The horizontal axis represents the range of CFD (from 0 to 1.0). The vertical axis represents probability of switching. These probabilities were calculated from the model for women who began with no method, using the values of CFD on the horizontal axis and holding all other explanatory variables at their means. The slopes and differences between the end points of the lines on the graph and represent the probability of switching to any other method, other than the original method (See Hamill, et al.,1990).

By examining Figure 4d we can see that about 95% of nonusers continued to use no method if they experienced no change in their fertility goals, but the proportion continuing with no method declined to about one-half for women who attained their desired family size during the switching period.

The relationship between method switching and residence, age, and education was weaker for those women than the relationship with CFD. Older women are less likely to start using some method during the switching period. Education makes for increasing the probability of switching from no method to any other method. The probability of switching for non-educated women is less than one-half its equivalent for highly educated women.

CFD has weaker effects on users of pill, IUD, and other methods (Figures 4-6) than on women who began as nonusers.

Users of pill, IUD, and other methods who experienced side effects were less likely to continue with the same method (Figures 4e,5e,6e). The probability of switching from other methods increased from 0.45 for women who did not experience side effects versus 0.88 for women who experienced side effects of method. The probability of switching from pill to any other method increased from 0.41 to 0.86 due to side effects. Concerning the IUD, the probability of switching increased from 0.21 to 0.64 due to side effects also.

To sum up, CFD is the most important factor that affects switching from nonuse to the use of any other method, while switching from any other method is affected most importantly by side effects.

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Table (7)

The Logistic Regression Coefficients (and Standard Errors) of the Determinants of Contraceptive Switching, Egypt, 1989-1992

Predictor Variables	Regression Coefficient and standard Errors by Origin Method Type			
	No Method	Other Methods	Pill	IUD
URBRUR	-0.1459 (0.0910)	0.8369[1] (0.3361)	0.3902[2] (0.1683)	0.2124 (0.1816)
Age	-0.0462[1] (0.0058)	-0.0588[1] (0.0206)	-0.0164 (0.0120)	-0.0257[2] (0.0123)
Educ	0.0797[1] (0.0091)	0.0090 (0.0251)	0.0017 (0.3310)	-0.0112 (0.0151)
CFD		-0.1678 (0.5046)	-0.2896 (0.1987)	-0.2684 (0.2665)
Side	2.7523[1] (0.1674)	2.1712[1] (0.6606)	2.1728[1] (0.5169)	1.9028[1] (0.1711)
Constant	-1.6115	1.5104	0.2518	-0.2576

(1) Sig. at P < 0.01   (2) Sig. at P < 0.05

7. CONCLUSIONS AND POLICY IMPLICATIONS:

The determinants of contraceptive switching behavior in Egypt are analyzed in this study using data come from the 1992 Egypt Demographic and Health Survey - contraceptive history - within 4-year switching period. The conclusion to be drawn from the analysis is that switching behavior appears to be a direct reason to both family size shifts and side effects of contraceptive methods. Women who attained all or a significant proportion of their desired family size tend to switch methods. Women who experienced side effects of a method tend to switch methods, usually to a more convenient method. Background determinants are less important than family size and side effects.

Programatically, the results of this study suggest the following recommendations:

1. Efforts to reduce side effects of methods through good counseling process are required to reduce method switching.

2. Since attaining desired family size seems to be the most important determinant of contraceptive switching, efforts directed toward changing the norms and traditions of large family size and promoting the idea of small family size are highly recommended.

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Figure (1)
Method Mix for Married Women, Egypt, 1989-1992

No Method
50.4

IUD
27.5

Pill
14.6

Other
7.5

1992

IUD
16.9

Pill
15.1

No Method
62

Other
6
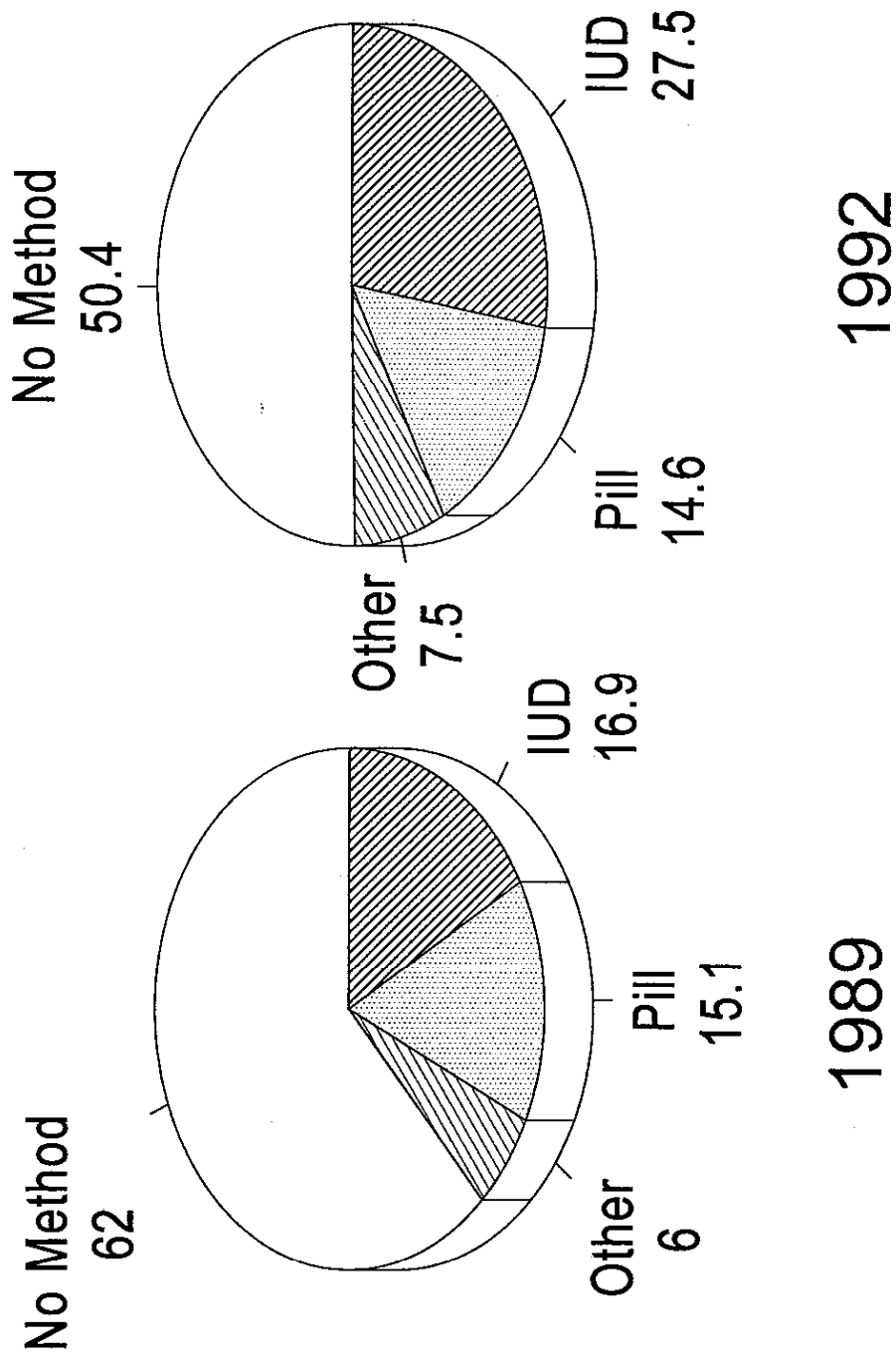
1989

Figure (2.A)

Origin Method by Destination Method
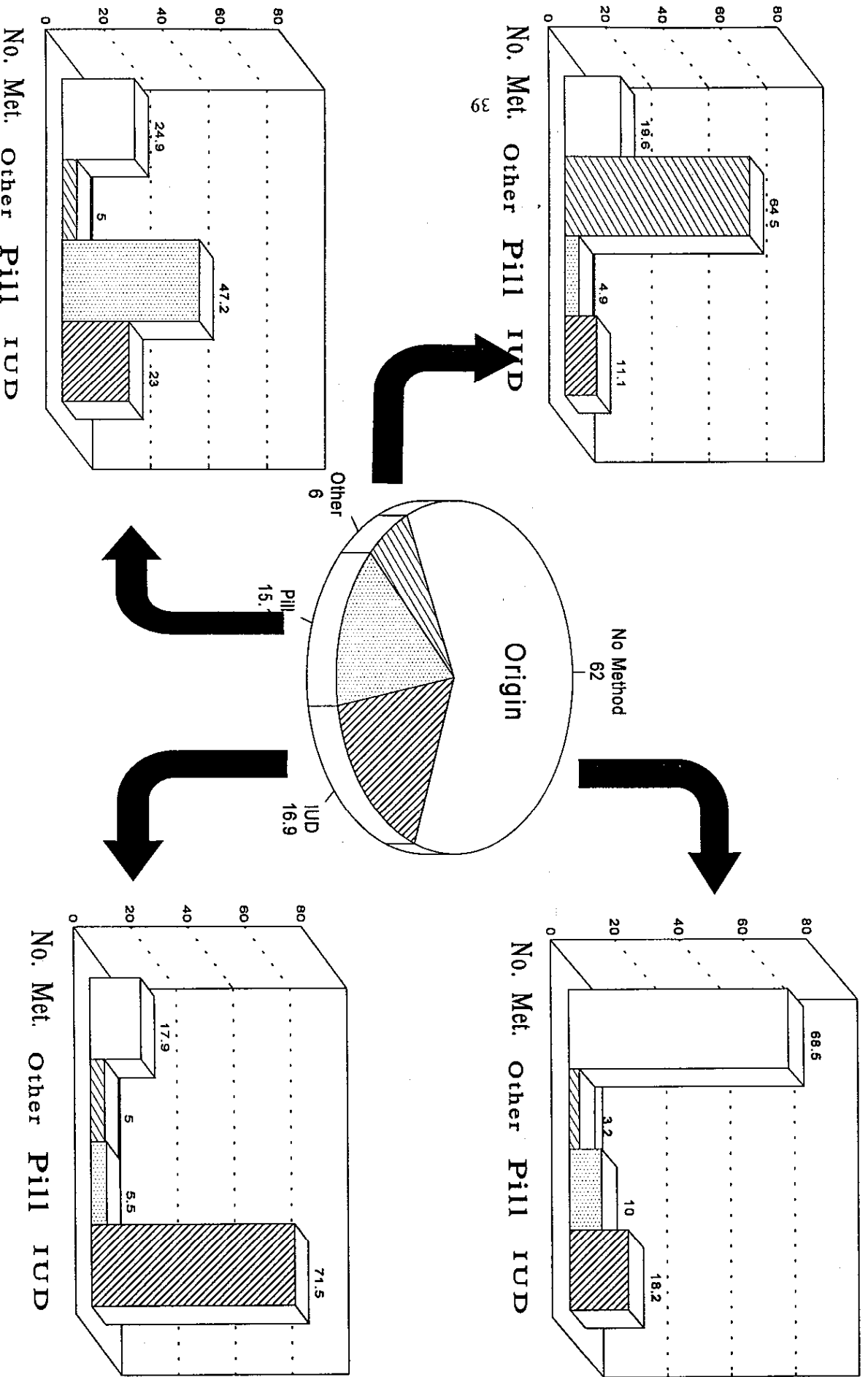
Figure (2.b)

Destination Method by Origin Method

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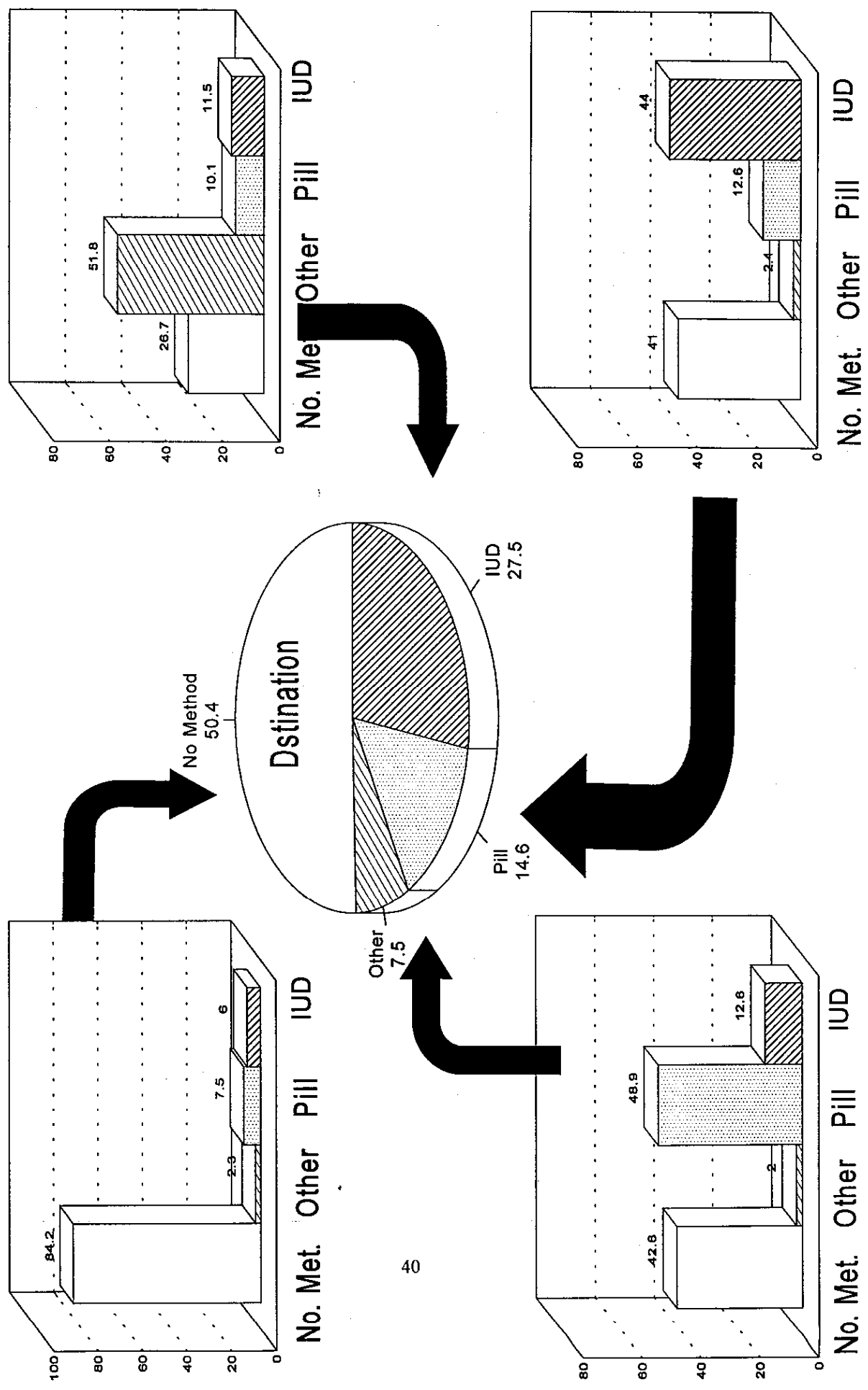
Figure (3)
Gain and Loss by Method Type, Egypt
1989-1992
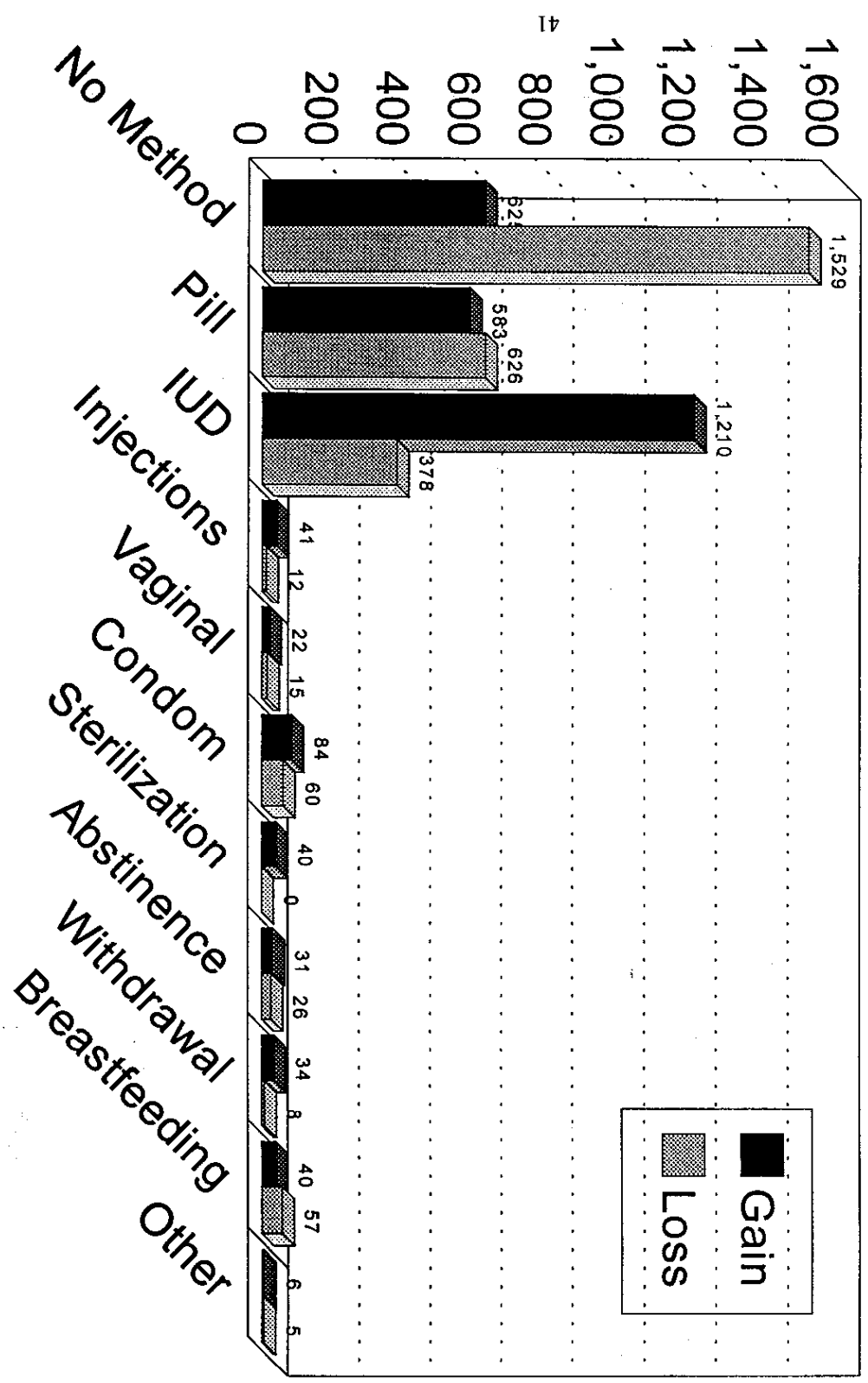
Source: See Table 4.

Fig (4)
Probability of Switching from No Method

Fig(4a)
Residence
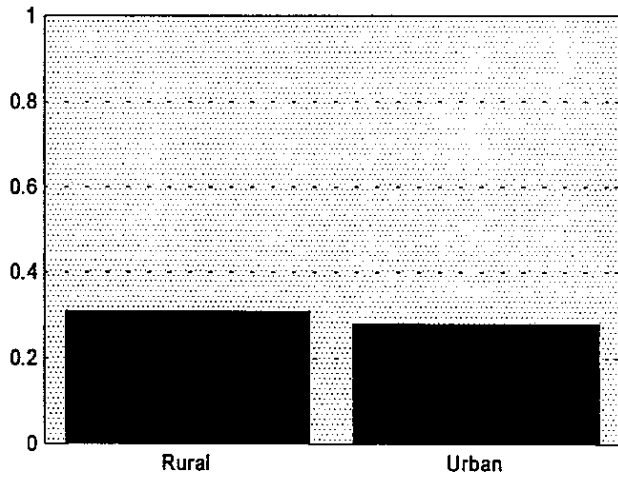
Fig(4b)
Age
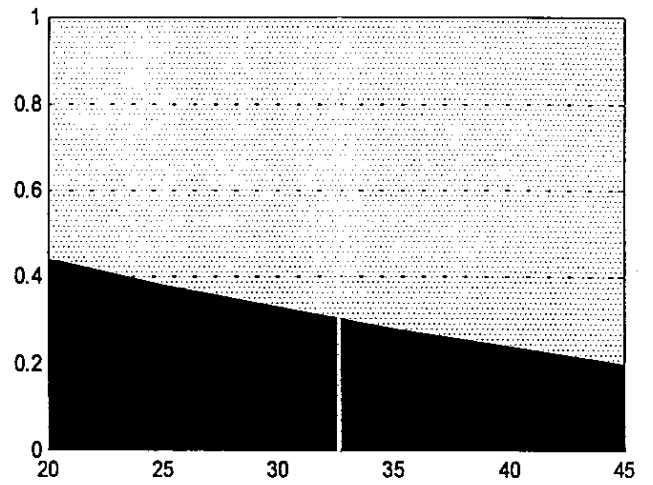
Fig(4c)
Education(Years)
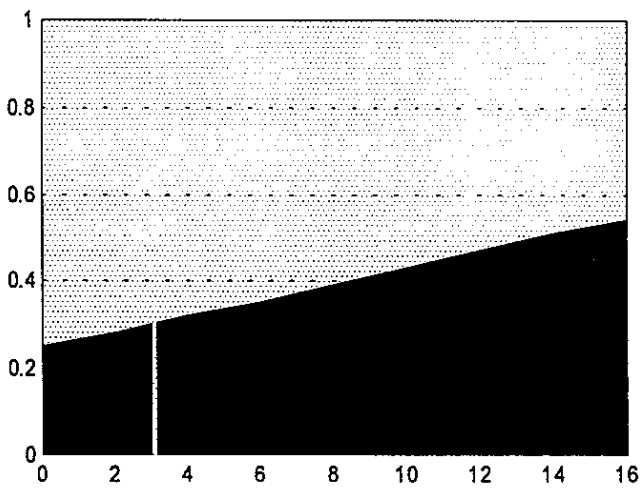
Fig(4d)
CFD
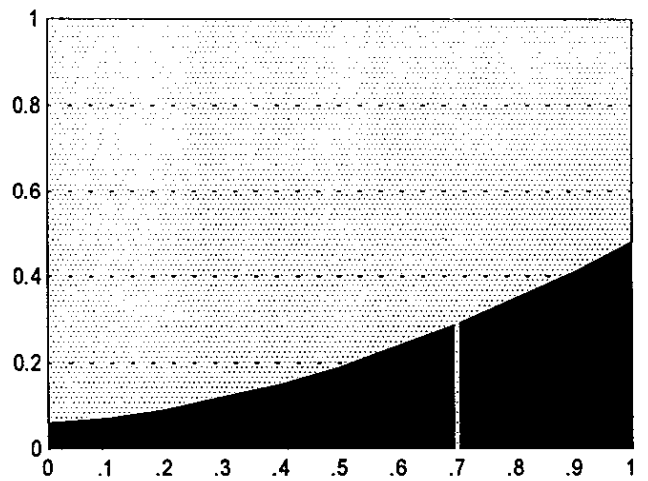
Note:
Vertical Lines Represent the Mean
of the Probability distribution

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Fig(5)

Probability of Switching From Other Methods

Fig(5a)
Residence

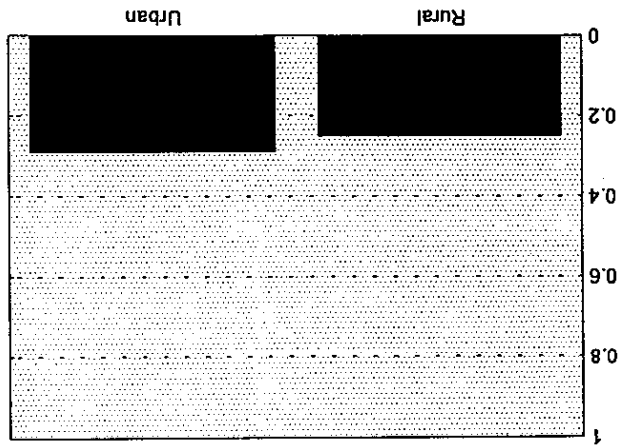Fig(5b)
Age

Fig(5c)
Education(Years)

Fig(5d)
CFD

Fig(5e)
Side effects

Rural

Urban

0   0.2   0.4   0.6   0.8   1

20   25   30   35   40   45

0   0.2   0.4   0.6   0.8   1

0   2   4   6   8   10   12   14   16

0   0.2   0.4   0.6   0.8   1

0   .1   .2   .3   .4   .5   .6   .7   .8   .9   1

0   0.2   0.4   0.6   0.8   1

No

Yes

0   0.2   0.4   0.6   0.8   1
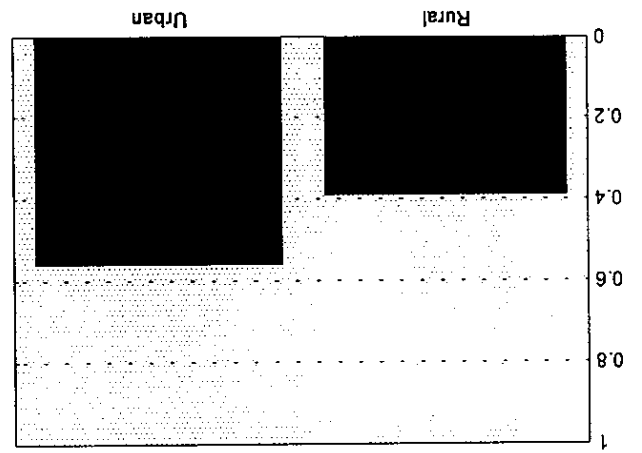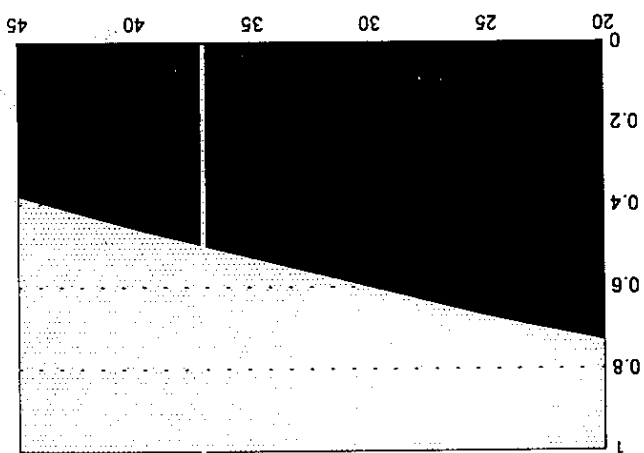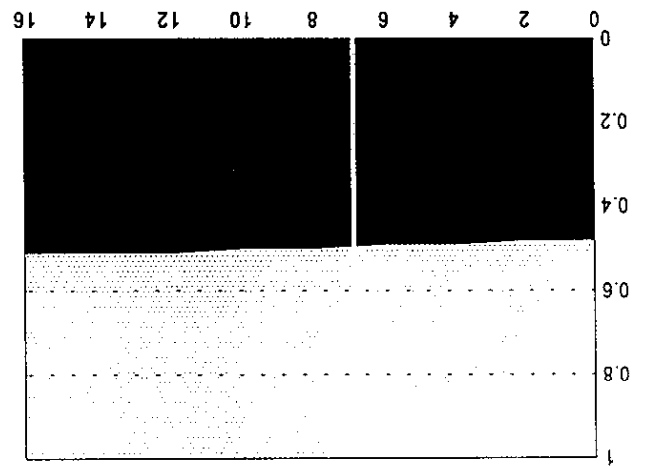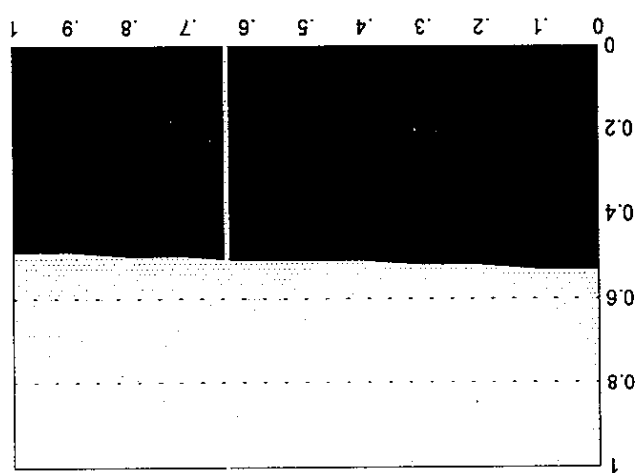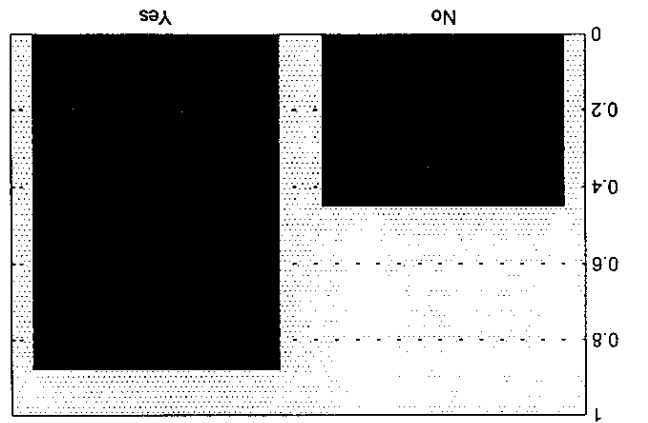
Fig(6)
Probability of Switching From Pill

Fig(6a)
Residence
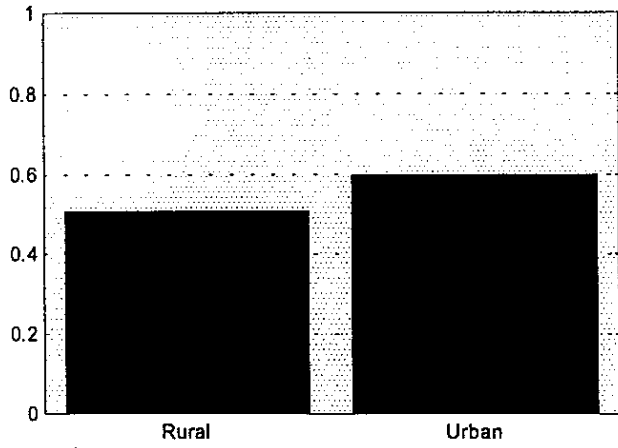
Fig(6b)
Age
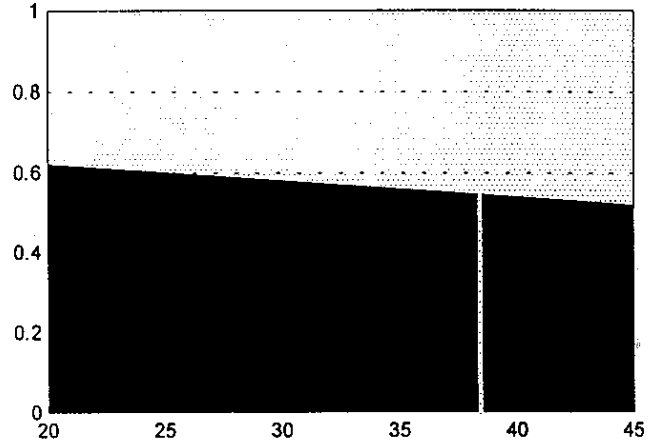
Fig(6c)
Education(Years)
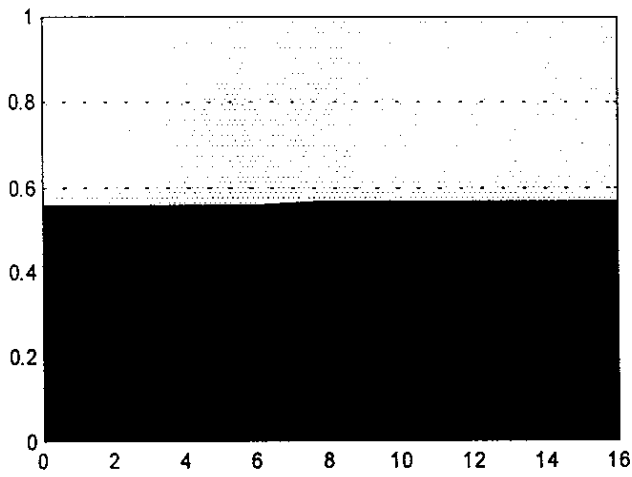
Fig(6c)
CFD

Fig(6a)
Side effects