ARTICLES

Differentials in Contraceptive Use and Method Choice in Vietnam

By Anh Dang

Some 60% of currently married, nonpregnant Vietnamese women use a contraceptive method and two-thirds of these rely on a modern method, generally the IUD, according to data from the 1988 Vietnam Demographic and Health Survey. Once individual, fertility and contextual variables are controlled, the odds of contraceptive use rise with each five-year age-group. However, age has no effect on whether couples use a modern or traditional method. The odds of method use among illiterate women are 34% lower than those among women with a secondary or higher education, but husband's education is a stronger predictor of contraceptive use: Couples in which the husband is illiterate or has a primary education are less likely to practice contraception than are those in which the husband has more education, but couples in which the husband has a primary education are more likely to use a modern method than are those in which the husband is more highly educated. Couples with daughters only are 27% less likely to use a method than are those with children of both sexes, and are also less likely to use a modern method. Couples with three or more children are more likely to use a modern method than are those with fewer children. Northern Vietnamese are 37% more likely to use contraceptives than southern Vietnamese and are also more likely to use modern methods. (International Family Planning Perspectives, **21:**2–5, 1995)

The recent 1989 population census and other surveys of Vietnam show that although mortality has dramatically declined to about eight deaths per 1,000 population per year, fertility has remained at a fairly high level of 29 births per 1,000 per year. Estimated at 72 million in 1993, the population is growing at a rate of about 21 persons per 1,000 per year, although the Government has made efforts to lower the birthrate through a subsidized family planning program and a two-child limit per family. The total fertility rate is about 3.8 live births per woman.[1]

According to the 1988 Demographic and Health Survey of Vietnam (VNDHS), about 95% of currently married women know of at least one modern birth control method.[2] However, the only widely available modern method is the IUD. According to the survey, 53% of currently married women of reproductive age were using a contraceptive method in 1988. Of these women, 62% were using the IUD and 29% were using a traditional method. Small percentages of users relied on modern methods such as tubal sterilization (5%), the condom (2%), the pill or vasectomy (fewer than 1% each). The considerable use of traditional methods such as rhythm and withdrawal indicates that there could be sizable unmet need for modern contraceptives in Vietnam.

Because of the shortage of reliable and adequate data, research on population and family planning in Vietnam is poor in both quality and quantity.[3] Further, government studies have focused on factors that demonstrate the role of family planning programs in slowing the growth rate of the population.

The study described in this article is an attempt to examine the effects of factors that may have played roles in determining contraceptive use and method choice in Vietnam. Two questions guide the analysis: 1) Are there differentials in contraceptive use in Vietnam, and if so, what factor or combination of factors accounts for them? 2) Do current users choose modern or traditional methods, and what factors explain their choice?

Data and Methods

Data for this study were taken from the 1988 VNDHS, which provided the first nationally representative data on contraceptive use in Vietnam. The VNDHS was based on a national sample designed to provide independent estimates for the two major regions of the country (formerly North and South Vietnam). A total of 151 urban subdistricts and rural communes from 12 provinces belonging to the two regions were randomly selected as sample clusters.[4]

The VNDHS identified 4,172 eligible ever-married women aged 15–49 in 4,086 households in these clusters. Because this study focuses on the determinants of current contraceptive use and current method choice, I limited the sample to 3,497 women exposed to the risk of conception—those who were married and not pregnant at the time of the survey.

In the first part of the analysis, the dependent variable is contraceptive use at the time of the survey. Although the VNDHS allowed for three responses—never used, used prior to but not at the time of the survey, and current use—I categorize women as current users or current nonusers (combining previous users and never-users) because the middle category contains few respondents. In the model, women (or their husbands) who were practicing contraception at the time of the survey are coded 1 and those who were not using any method are coded 0.

The second part of the analysis, which examines the odds of choosing a modern method over a traditional method, is limited to the 2,142 women who were cur-

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rent users. Contraceptive methods defined as modern include the IUD, the pill, the condom, tubal sterilization and vasectomy, while the traditional methods category is composed of rhythm, withdrawal and herbal remedies. Other methods, such as injectables, spermicides, foam, the implant and chemical sterilization, were not included in the VNDHS questionnaire because they were not available in Vietnam at the time of the survey. The dependent variable is coded 1 if the woman (or her husband) was using a modern method and 0 if she (or her husband) was using a traditional method at the time of the survey.

Both parts of the analysis use the same set of independent variables, consisting of individual and contextual predictors of contraceptive use and method choice. The VNDHS originally measured education as a four-category variable rather than a continuous variable. For this analysis, however, I regroup the educational levels into three categories—illiterate, primary, and secondary or more—for both wives and husbands. The continuous variable for the woman's age is replaced by five age-groups: 15–24, 25–29, 30–34, 35–39, and 40 or older, represented by a series of dummy variables. The variable for number of living children is constructed with three groups—two or fewer, three, and four or more—to highlight the possible differentials in fertility behavior under the impact of the government's two-child policy.

Sex of living children, a variable hypothesized as related to patterns of contraceptive use and method choice, includes four categories—children of both sexes, sons only, daughters only and no children. Region (North or South) and residence (urban or rural) are included as proxies to capture contextual effects that cannot be measured with individual-level variables.

To examine determinants of contraceptive practice, I use a logistic regression model because the dependent variables are dichotomous. For both dependent variables, the model fitting process involves three stages of estimation. The first model includes only the individual background variables. In the second, the fertility variables are introduced into the regression equation. The third model incorporates the contextual variables, so that the additive effects of the micro-level and macro-level variables are estimated simultaneously.

To check for significant interaction effects among the explanatory variables, I constructed and tested major interaction terms, but they were not statistically significant (results not shown). Therefore, Model 3 without interaction terms is the most parsimonious model and provides the best estimations of the effects of the explanatory variables.

Results

Table 1 presents the percentages of married, nonpregnant women using a contraceptive and the percentages of contraceptive users relying on a modern method according to the explanatory variables used in the regression analysis. These percentages tend to increase with the age of the wife and the educational levels of the husband and the wife. Couples having three children have the highest rates of contraceptive use and modern method use. Those with at least one son and one daughter are most likely to practice contraception and to use a modern method, followed by those with sons only and those with daughters only. Urban couples are more likely than rural couples to practice contraception, but they are less likely to use a modern method.

Tables 2 and 3 present the results of logistic regression analyses of predictors of contraceptive use and modern method use. All models contribute significantly to explaining patterns of contraceptive use.

Contraceptive Use

As the first model in Table 2 (page 4) shows, the wife's age is a strong and significant predictor of contraceptive use when only individual-level variables are entered into the equation. In comparison with wives aged 40 or older, wives younger than 20 are 73% less likely to practice contraception. The odds of method use peak among women aged 30–34 and 35–39, who are significantly more likely (by 15% and 38%, respectively) to use a method than are those in the reference group. This finding may reflect a decreasing need for contraceptive use among the oldest group of women.

Model 1 also shows that education has a highly significant effect, with the likelihood of contraceptive use increasing with the wife's and the husband's educational level. The odds of method use are 45% lower among illiterate wives and 12% lower among wives with a primary education than they are among wives with a secondary or higher education. The same pattern occurs among the husbands.

The second model in Table 2 shows that the effects of age and education persist after the fertility-related variables are added to the regression equation. Couples with three children are just as likely to use a method as are those having fewer than three, indicating that Vietnamese couples still prefer a three-child family. Couples with four or more children, however, are 27% less likely to practice family planning than are those with fewer than three. This result is rather surprising, because contraceptive use usually increases with parity. This finding may reflect the impact of the two-child policy aimed at couples with one or two children.

The second model yields particularly interesting results on the effect of sex of living children on the use of contraceptives. It indicates that in comparison with couples who have at least one son and one daughter, couples with sons only are 13%

Table 1. Percentages of married, nonpregnant women using a method and percentages of contraceptive users relying on a modern method, by selected explanatory characteristics, VNDHS, 1988

Characteristic	Method users		Modern method users	
	N	%	N	%
Total	**3,497**	**61.1**	**2,142**	**68.5**
Wife's age				
15–19	37	10.8	4	50.0
20–24	471	41.5	197	61.0
25–29	862	60.1	536	65.1
30–34	820	66.3	559	66.6
35–39	533	74.8	301	80.2
≥40	774	58.5	454	71.7
Wife's education				
Illiterate	223	31.5	78	70.4
Primary	2,684	60.1	1,632	69.0
Secondary or higher	590	73.2	432	59.9
Husband's education				
Illiterate	109	26.3	36	66.4
Primary	2,287	56.6	1,311	73.4
Secondary or higher	1,101	78.5	795	58.7
Parity				
≤2	1,526	57.1	879	59.8
3	692	69.7	487	75.4
≥4	1,279	60.7	776	71.8
Sex of children				
Both sexes	2,126	65.6	1,409	72.9
Male only	668	61.6	412	63.4
Female only	521	55.2	292	54.0
No child	182	15.5	29	10.7
Residence				
Urban	775	76.8	584	60.2
Rural	2,742	56.6	1,558	71.2
Region				
North	1,762	67.5	1,195	81.1
South	1,735	54.6	947	51.2

Table 2. Results of stepwise logistic regression showing odds ratios for characteristics predicting contraceptive use

Characteristic	Individual-level analysis	Fertility variables added	Contextual variables added
Wife's age			
15–19	0.270***	0.403**	0.462*
20–24	0.654***	0.715**	0.799**
25–29	0.906*	1.108*	1.146*
30–34	1.152**	1.217**	1.210***
35–39	1.377***	1.382***	1.413**
≥40	1.000	1.000	1.000
Wife's education			
Illiterate	0.545***	0.527***	0.662***
Primary	0.882*	0.841*	0.950
Secondary or higher	1.000	1.000	1.000
Husband's education			
Illiterate	0.498***	0.489***	0.510**
Primary	0.753***	0.738***	0.741**
Secondary or higher	1.000	1.000	1.000
Parity			
≤2	na	1.000	1.000
3	na	0.871	0.974
≥4	na	0.729***	0.826***
Sex of children			
Both sexes	na	1.000	1.000
Male only	na	0.868*	0.899
Female only	na	0.728***	0.731***
No child	na	0.301***	0.295***
Residence			
Urban	na	na	1.561***
Rural	na	na	1.000
Region			
North	na	na	1.371***
South	na	na	1.000
Constant	*1.850***	*2.857***	*2.099***
−2 x log likelihood	4295.9	4137.0	3842.4
χ^2	336.7**	158.9**	121.6**
Df	9	14	16

Notes: In tables 2 and 3, *p<.05, **p<.01, ***p<.001; all tests are two-tailed; na=not applicable.

less likely to practice contraception and couples with daughters only are 27% less likely to practice family planning. As one would expect, childless couples are much less likely to practice contraception.

The third model in Table 2 shows the pattern of contraceptive use once region and residence are added to the equation. The difference in contraceptive use between women with a primary education and those with a secondary or higher education is no longer significant, although the difference between illiterate women and women with the most education remains highly significant. Although couples with daughters only continue to be less likely to practice family planning than those with offspring of both sexes, the difference between couples with sons only and those having offspring of both sexes is no longer significant.

Urban women are 56% more likely to practice contraception than are their rural counterparts. In addition, the odds of contraceptive use are 37% higher among cou-

ples living in the North than among those living in the South.

Method Choice
Table 3 presents logistic regression results on predictors of method choice, which in the Vietnamese context is mainly between the IUD and traditional methods. After fertility and contextual factors are controlled, age and education of wives have no significant effect on the choice between modern and traditional methods. However, husbands with a primary education are significantly more likely to choose a modern method than are those with a secondary or higher education.

Compared with couples having fewer than three children, couples with three children are 27% more likely to select a modern method. Couples with four or more children are also more likely to choose a modern method over a traditional method, but the effect is significant only when differences between residences and regions are taken into account. Although there is no difference in method choice between families with all sons and those with children of both sexes, the odds of choosing a modern contraceptive are significantly lower among couples with daughters only. This preference for a traditional birth control method may be related to a desire for another son.

Despite the significant difference between urban and rural populations in the likelihood of using contraceptives, the patterns of method choice appear to be similar. This result may reflect the emphasis the Vietnamese family planning program placed on the IUD, especially in rural areas.[5] Region, however, is a highly effective predictor of method choice: Couples in the North are more than twice as likely to use a modern method as are those in the South.

Summary and Discussion
This study examines differentials in contraceptive use and method choice in Vietnam. By incorporating data about hus-

band's education into a model that accounts for the effects of individual and contextual factors on patterns of contraceptive use, this study demonstrates that the educational attainment of both spouses is a major factor. Once all individual, fertility and contextual variables are accounted for, the husband's education is a stronger predictor of method use than is the education of the wife. Raising levels of education may be one effective means of advancing family planning acceptance and increasing the demand for contraceptive services in Vietnam.

Although women's contraceptive use increases with age up to 40, there are no significant age differences in modern method use. Notably, there are no differences in contraceptive use among families until the third child is born; however, when couples with three or more children adopt a contraceptive, they are significantly more likely to choose a modern method. This result may reflect both the impact of the demographic policy adopted by the Vietnamese government and couples' preference for a three-child family.

To a great extent, contraceptive use and modern method use depend on the sex of a couple's living children. Couples who have only sons or daughters (particularly daughters) are much less likely to practice contraception, and even if they do, they are more likely to choose a traditional method. These findings indicate that couples want at least one son and one daughter and that they prefer sons to daughters, even when differences between regions and residences are accounted for.

As in many other developing countries in Southeast Asia, family planning activity in Vietnam has been extensively influenced and controlled by the government. Results of logistic regression demonstrate that family planning is more likely to be practiced in the North than in the South and that the odds of contraceptive use are higher in urban areas than in rural areas. The Hanoi-directed family planning program's emphasis on the IUD over the last several decades largely explains both findings.

Most of the results in this analysis do not differ substantially from those from studies in other Southeast Asian societies.[6] This study demonstrates that patterns of contraceptive use differ considerably by individual characteristics as well as by geographic areas. It attempts to gauge the ways in which individual and contextual factors influence contraceptive use and method choice and the strength of those effects. The strong association between husband's ed-

Table 3. Results of stepwise logistic regression showing odds ratios for characteristics predicting modern method use

Characteristic	Individual-level analysis	Fertility variables added	Contextual variables added
Wife's age			
15–19	0.692	1.163	1.164
20–24	0.790**	1.035	1.370
25–29	0.879	1.004	1.047
30–34	0.900	0.941	0.989
35–39	0.979	0.994	1.036
≥40	1.000	1.000	1.000
Wife's education			
Illiterate	1.011	0.889	1.023
Primary	1.058	0.956	0.908
Secondary or higher	1.000	1.000	1.000
Husband's education			
Illiterate	1.162	1.124	1.119
Primary	1.365***	1.334***	1.232***
Secondary or higher	1.000	1.000	1.000
Parity			
≤2	na	1.000	1.000
3	na	1.262**	1.269***
≥4	na	1.086	1.235**
Sex of children			
Both sexes	na	1.000	1.000
Male only	na	0.967	0.902
Female only	na	0.722***	0.785***
No child	na	0.241***	0.268**
Residence			
Urban	na	na	0.959
Rural	na	na	1.000
Region			
North	na	na	2.005***
South	na	na	1.000
Constant	*0.139**	*0.208**	*0.185**
–2 x log likelihood	*2607.6*	*2537.0*	*2243.1*
χ^2	*58.9**	*92.5***	*193.4****
Df	*9*	*14*	*16*

ucation and the use of contraceptives found in this study points to the potential for men to play a cooperative role in family planning in the future.

The findings of this study have several policy implications. First, population and family planning policies should take into account the desire for sons or children of both sexes. This desire, which reduces couples' motivation to practice family planning or use modern contraceptive methods, is an obstacle to the government's efforts to promote a two-child-family norm and to speed the pace of fertility decline. Second, with the recent endeavors of the government and international organizations to increase supplies of the pill and the condom, as well as the recent testing of the contraceptive implant, it is important to examine the acceptability of other modern methods in Vietnam. Is the acceptability of specific methods due to their inherent characteristics or to differential program emphasis?

Finally, the rapidly increasing structural diversity of Vietnamese society raises several important questions: What patterns of contraceptive use will characterize various sociodemographic and economic groups? How will differences in contraceptive use and method choice change? Will men increase their use of modern contraceptives, thus gradually replacing the use of traditional methods? Studying the changing patterns of contraceptive use and method choice in Vietnam will require more information, more surveys and more studies comparing these patterns over time.

References

1. Economic and Social Commission for Asia and the Pacific, "1994 ESCAP Population Data Sheet," Bangkok, 1994.

2. National Committee for Population and Family Planning (NCPFP), *Vietnam: 1988 Demographic and Health Survey,* Hanoi, Socialist Republic of Vietnam, 1990.

3. J. Banister, *Vietnam Population Dynamics and Prospects,* Institute of East Asian Studies, University of California, Berkeley, 1993.

4. NCPFP, 1990, op. cit. (see reference 2).

5. J. Allman et al., "Fertility and Family Planning in Vietnam," *Studies in Family Planning,* **22:**308–317, 1991.

6. B. Soeradji and Hatmaji, "Contraceptive Use in Java, Bali: A Multivariate Analysis of the Determinants of Contraceptive Use," Scientific Report No. 24, International Statistical Institute/World Fertility Survey, Voorburg, The Netherlands, 1982; Z. Zablan et al., "Contraceptive Choice in the Philippines, 1973–83," *Journal of Biosocial Science,* suppl. to Vol. 11, 1989, pp. 61–74; and R. Bulatao, J. Palmore and S. Ward, *Choosing a Contraceptive: Method Choice in Asia and the United States,* Westview Press, Boulder, Colo., 1989.

Resumen

Datos de la Encuesta Demográfica y de Salud de Vietnam, realizada en 1988, revelan que alrededor del 60% de las mujeres vietnamitas no embarazadas y actualmente casadas usan un método anticonceptivo y dos tercios de ellas utilizan un método moderno, generalmente el DIU. Una vez que se controlan las variables individuales, de fecundidad y contextuales, las probabilidades de uso anticonceptivo aumentan con cada grupo de edad. Sin embargo, la edad no incide como un factor con respecto a si el método utilizado es moderno o tradicional. La probabilidad de que las analfabetas usen anticonceptivos es 34% menor que aquellas que tienen educación secundaria o superior, y la educación de los esposos es una variable predictiva del uso de anticonceptivos aún mayor: cuando el hombre es analfabeto o tiene únicamente educación primaria las parejas son menos proclives a practicar la anticoncepción, aunque en las parejas donde el hombre cuenta con educación primaria es más probable el uso de un método moderno que entre las parejas en las que el hombre tiene estudios superiores. Las parejas que tienen solamente hijas son un 27% menos proclives a usar un método que aquellas parejas con hijos de ambos sexos, y también son menos proclives a utilizar un método moderno. Las parejas con tres o más hijos son más proclives a utilizar un método moderno que aquellas con menos hijos. Las norvietnamitas son un 37% más proclives a usar anticonceptivos que las sudvietnamitas y también se inclinan más por los métodos modernos.

Résumé

Selon les données de l'Enquête démographique et de santé menée au Viêt Nam en 1988, environ 60% des Vietnamiennes mariées non enceintes pratiquent une méthode de contraception; il s'agit, pour deux tiers d'entre elles, d'une méthode moderne, généralement le stérilet. Compte tenu des variables individuelles, de fécondité et de contexte, la probabilité du recours à la contraception augmente avec chaque tranche d'âges de cinq ans. L'âge est cependant sans effet sur le recours des couples à une méthode moderne ou traditionnelle. La probabilité de la pratique contraceptive parmi les femmes analphabètes est inférieure, de 34%, à celle calculée parmi les femmes scolarisées au niveau secondaire ou supérieur. Le niveau d'éducation du mari est un plus grand prédicteur de pratique contraceptive: les couples dans lesquels le mari est analphabète ou scolarisé au niveau primaire seulement sont moins susceptibles de pratiquer la contraception que ceux dans lesquels le mari est davantage instruit. Néanmoins, la probabilité du recours à une méthode moderne est plus grande lorsque le mari est scolarisé au niveau primaire que lorsqu'il l'est à un niveau supérieur. Les parents d'enfants de sexe féminin uniquement sont 27% moins susceptibles de pratiquer la contraception que ceux d'enfants des deux sexes; ils sont aussi moins susceptibles de pratiquer une méthode moderne. La pratique d'une méthode moderne est plus probable parmi les couples parents de trois enfants et plus que parmi ceux d'un nombre d'enfants moindre. Les Vietnamiens du nord sont 37% plus susceptibles de pratiquer la contraception que les Vietnamiens du sud, et ils recourent aussi, dans une plus large mesure, aux méthodes modernes.