Access as a Factor in Differential Contraceptive Use between Mayans and Ladinos in Guatemala

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ACCESS AS A FACTOR IN DIFFERENTIAL CONTRACEPTIVE USE BETWEEN MAYANS AND LADINOS IN GUATEMALA

Short Running Title: Access and Contraceptive Use in Guatemala

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BRIEF BIOGRAPHIC SKETCH

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SUMMARY

ACCESS AS A FACTOR IN DIFFERENTIAL CONTRACEPTIVE USE BETWEEN MAYANS AND LADINOS IN GUATEMALA

Previous studies consistently have demonstrated that the Mayan women of Guatemala have a far lower level of contraceptive use their ladino counterparts (e.g., 50 percent versus 13 percent in the 1998 DHS). Most researchers and practitioners have attributed this to social, economic, and cultural differences between the two groups that result in Mayans having a far lower demand for family planning than ladinos. This paper tests an alternative hypothesis: that the contraceptive supply environment may be more limited for Mayans than ladinos. This analysis uses an innovative approach of linking household level data from the 1995/6 Guatemala DHS and with facility-level data from the 1997 Providers Census for four highland departments in which the latter was conducted.

On average, married women of reproductive age in the four departments lived 2 kilometers from a facility that provided some type of contraception. Mayans and ladinos did not differ significantly in terms of (1) mean distance to the closest facility offering FP services, or (2) mean distance to a facility providing each specific method (except injectables). Mayans were more likely to live closer to an APROFAM clinic, whereas ladinos were closer to a facility that offered access to the injectable. Otherwise, the FP supply environment differed little for the two groups. However, access may not be the

determining factor in contraceptive use, given that less than 8 percent of users got their (last) contraceptive from the nearest facility. Moreover, APROFAM -- which was the nearest facility for only 7 percent of the respondents in this study -- was the source of supply for 48 percent of users. Although this study does not directly measure quality, the characteristics that differentiate APROFAM from other service providers point to quality as more important than physical access or cost in source of contraception among this group of users.

ACCESS AS A FACTOR IN DIFFERENTIAL CONTRACEPTIVE USE BETWEEN MAYANS AND LADINOS IN GUATEMALA

Contraceptive prevalence is lower in Guatemala than in any other Latin American country except Haiti. Thirty-eight percent of married women of reproductive age reported use of a contraceptive method, in contrast to a regional average of 64 percent (PRB, 2001). Part of the reason for the low level of use in Guatemala relates to its ethnic composition: approximately half of the Guatemalan population is Mayan[1], belonging to one of 22 different linguistic groups. Collectively, Mayans have far lower levels of contraceptive use than their Spanish-speaking counterparts, the ladinos (a pattern that repeats itself on almost every social and economic indicator for which data are available). In 1998, 50 percent of married ladino women reported contraceptive use, in contrast to only 13 percent of Mayans (INE, MSPAS, USAID, UNICEF, FNUAP, and MACRO 1999).

A number of anthropologists, sociologists, public health specialists and others have written on the gap in the standard of living between Mayans and ladinos. "Although all sectors of the Guatemalan population have been affected by political violence and continuous economic deterioration, the indigenous people have borne the brunt of brutality and suffering in terms of rapidly deteriorating quality of life," Enge

[1] Guatemala is composed of two primary groups: the Mayans and the *ladinos*. The Mayans are descendents from the ancient Mayan civilians of Central America. In common usage, "*ladino*" simply means non-Indian. It includes a small Caucasian elite, a large *mestizo* sector, and those Indians who no longer wear *traje* (traditional dress), speak a native language, or consciously identify themselves as indigenous people (Barry, 1992).

and Martinez-Enge, 1993). The prevailing view is that these large socio-economic and cultural differences result in a low demand for contraception among Mayans (Santiso and Bertrand, 2001).

However, demand is only one side of the equation; supply is the other. Mayans may also have lower levels of use because they have far more limited access to facilities that offer contraception, and within those facilities to a more limited range of contraceptive methods. A preliminary analysis of the access variable (based on data from four of Guatemala's 22 departments[2]) showed that access did impact contraceptive use among Mayans (but not ladinos): those living within ten minutes of a FP facility were more likely to use contraception than those living further away, controlling for socio-demographic and other factors (Bertrand, Seiber and Escudero, 2001). However, the previous analysis did not address the question: was the supply environment different for Mayans and ladinos?

One cannot examine this question of access using DHS-type household survey data alone. It is also necessary to have data on the facilities that serve the households in the DHS clusters (i.e., a facility-based survey). Although the data had not been collected with this purpose in mind, the 1995/6 DHS household survey and the 1997 Provider Census in four departments in the Western highlands of Guatemala provided the necessary "linkable" data for examining access.[3]

[2] *Departamentos* in Guatemala are administrative divisions somewhat smaller than states in the U.S.

[3] This technique of linking household and facility-based data was developed and refined by the MEASURE *Evaluation* Project for assessing the impact of different elements in the service delivery environment on contraceptive use.

In this analysis we (1) describe the FP service delivery environment in these four departments, (2) compare the average distances that Mayan and ladino women must travel to reach different types of clinics and different contraceptive methods, and (3) compare the characteristics of the facilities closest to Mayan and to Ladino women, respectively. Finally, we measure the percentage of contraceptive users that got their (last) contraception at the facility nearest their home.

It is important to stress that these four departments are not representative of Guatemala as a whole. However, this analysis does take advantage of the only data available to examine this question of access in a country with highly differential use patterns for the two primary ethnic groups.

EVIDENCE OF THE EFFECTS OF ACCESS ON CONTRACEPTIVE USE

During the 1970s and 1980s much of the emphasis in the international family planning movement was to promote increased access to services, and multiple studies were conducted on its relationship to contraceptive use. Evidence from Mexico, Korea and Bangladesh during that period suggested that higher levels of contraceptive availability within communities were associated with increased rates of contraceptive use (Tsui, Hogan, Welti-chanes, and Teachman, 1981a). These results were supportive of the policy emphasis at that time on maximizing the geographic availability of contraceptive services (Tsui, Hogan, Teachman, Welti-chanes, 1981b). Pullum (1991) also concluded that geographic proximity was an important determinant of contraceptive use. Grady,

Klepinger, and Billy (1993) found evidence of the positive effects of "ready access to family planning information and services" to be a community characteristic associated with contraceptive effectiveness in the United States. However, further research on this subject in the international context led Tsui and Ochoa (1992) to conclude that while access has some influence on contraceptive use, the effect was small in some contexts.

Entwistle, Rindfuss, Walsh, Evans and Curran (1997) used spatial network analysis techniques to develop a measure of family planning accessibility and to evaluate the effects of these geographically derived measures on method choice in Thailand. Their results suggested that convenience of local family planning outlets encouraged use of methods offered by those outlets and discouraged use of alternative methods and sources. Moreover, the history of accessibility (length of time a given method had been available) also had a measurable effect on method choice.

In sum, the weight of the evidence suggested some effect of access on contraceptive use, but it did not hold in all contexts.

During the 1990s (and in the wake of the 1994 International Conference on Population and Development) service providers and researchers focused increasingly on quality of services. A number of researchers examined the relative importance of access to services versus quality of care (Bongaart and Bruce 1995) or perceived quality of care (Mroz, Bollen, Speizer, and Mancini, 1999) as determinants of contraceptive use; both studies concluded that quality (or perceived quality) was more important than travel

distance or travel time in increasing use.[4] Cohen (2000) assessed the independent influence of four dimensions of family planning effort on contraceptive use in Malawi: mass media exposure, increased contraceptive choice,[5] improved accessibility of services, and improved service quality. He found that all four components contributed to contraceptive use, with media exposure and contraceptive choice being the strongest; accessibility (proximity) appeared to be particularly important for rural and for younger women. Characteristics of the nearest service provider generally appeared to be insignificant in the Malawi study. These recent studies suggest that quality of services may be as important if not more important than physical access in increasing contraceptive use.

METHODOLOGY

This analysis is based on the 1995/96 Guatemalan DHS and the 1997 Providers Survey. The 1995/96 DHS oversampled four highland departments (two predominantly Mayan: Sololá and Totonicapán; two predominantly ladino: Quetzaltenango and San Marcos) to produce representative samples for each of the four departments. The 1997 Provider Survey consisted of a census of all 300 facilities in the four departments (pharmacies excluded), plus five hospitals in Guatemala City. We further categorized the 296 linkable facilities into seven types: three governmental (hospital, health centers, and

[4] Ross (1995) contested the conclusions of the Bongaart and Bruce study, citing less than satisfactory evidence, the need for method-specific data, and the omission of contrary data.
[5] Although analyzed separately from service quality, "choice" is widely recognized to be a key element in defining quality of care (Bruce, 1990).

health posts) and four private (APROFAM,[6] religiously affiliated clinics, private clinics/doctors, and other NGOs). The Guatemalan Social Security Institute (IGSS)[7] operated only three facilities (two hospitals and one clinic), representing one percent of the total facilities in these four departments. Since IGSS is not a major provider of family planning in the Western highlands, the data on these three IGSS facilities have been included under "government facilities."

We used "aerial" distances measured in kilometers ("as the crow flies") as the distance between health facilities and households in the DHS clusters. Kilometers were computed using Cartesian distances between the latitude/longitude point of the facility and the latitude/longitude of the center of the DHS cluster, based on readings from a geographic positioning device. This computed figure ignores geographical barriers, which are non-trivial in the mountainous highland area. However, it provided an objective measure available for every facility listed in the census.[8]

For this study, the unit of analysis was the woman (i.e., respondent in the DHS household survey), and for each woman we identified the nearest health facility. This approach produced representative samples of respondents in these departments, such that

[6] APROFAM, the Asociación ProBienestar de la Familia, is the private family planning association and an affiliate of the International Planned Parenthood Federation.

[7] IGSS is a parastatal organization which generally gives a higher quality service that the MOH, but primarily in urban areas to those working in the formal sector.

[8] We also considered using the reported distances provided by key informants in these communities, but decided against this measure because of a substantial problem of missing data. However, the correlation coefficient between the two measures – aerial distance and distance reported by key informants – was 0.74. The correlation coefficient differed markedly over the four departments: .91, .87, .74, and .44 with the lowest association found for the most mountainous department (San Marcos). To test the robustness of the data, we excluded San Marcos and ran the data in Table 2 and 3 for the remaining three departments. The findings were essentially the same as for the four departments.

the results are generalizable to these four departments (but not to all of Guatemala). By linking every Mayan and ladino respondent in the household survey to her closest facility, we defined the service delivery environment for each woman according to the characteristics of the facility nearest to her. This type of linking allowed us to measure mean distance to the nearest facility offering any family planning, to the nearest facility offering specific FP methods, or to a specific type of service (e.g., APROFAM). Although we recognize that women do not necessarily use the facility closest to their home, this approach allowed us to examine the *potential access of women to family planning services in these communities.* The resulting data set consisted of:

- 1,190 ladino and 1,825 Mayan women from these four departments;
- 74 different communities/clusters; and
- 296 facilities (out of 300 included in the census) that were linked to these women.

These data on distance to facilities providing FP services allowed us to compare the service delivery environment for Mayans and ladinos. We calculated the mean for each continuous variable and the percentage responding "yes" for each dichotomous variable (e.g., the facility has electricity: yes/no). We then performed a test of the equality of means to identify significant differences between the two ethnic groups. Although the sample had a large number of cases (3,015), these observations were not truly independent, since all distances were measured from just 74 communities (independent clusters). To correct for this lack of independence, we used an adjusted Wald statistic in

testing for differences in the means for the two groups. This increased the standard errors for the test statistic substantially, as would be expected.

RESULTS

A Profile of the Supply Environment in these Four Departments

Table 1 provides an overview of the family planning supply environment as of 1997 in these four departments, for the 296 facilities as a whole and by type. Over three-quarters (76 percent) were government facilities (3 percent hospitals, 16 percent health centers, and 57 percent health posts). APROFAM -- the largest provider of contraceptive services in the country -- had a full service clinic in the municipal capital of each of the four departments, but constituted less than two percent of all facilities. Other private (religious, private provider, and other NGO) made up the remaining 22 percent.

Most of these facilities operated five days a week, 8 hours a day (with hospitals and private providers having more days/hours of service). Hospitals had by far the greatest number of outpatient healthcare visits per week per facility (302), with APROFAM in second place (201). Over half the hospitals (89 percent) and other NGOs (60 percent) had at least one Mayan speaking staff member. However, in the five other types of facilities less than half had at least one Mayan speaker on staff[9]. Over three-quarters of the facilities of each type had running water and electricity, whereas fewer of

[9] This variable was operationally defined as one or more of the staff who were present and interviewed on the day of the survey reporting to speak a Mayan language.

the health posts had these two amenities. Two-thirds of all facilities had toilets for clients, except for health posts.

Table 1 provides data on family planning products and services available at these 296 facilities. Hospitals had the largest number of FP personnel, followed by health centers and APROFAM clinics. Overall, 83 percent of facilities offered at least one contraceptive method. (Religious clinics were the notable exception, with only 11 percent carrying methods.) APROFAM clinics tended to offer the full range of contraceptive methods, which was not the case elsewhere. Pills and condoms were widely available (at 79 and 74 percent of facilities, respectively), but less than half of the facilities carried other methods including injectables (37 percent), and IUD (20 percent). Male and female sterilization were only available from APROFAM, selected hospitals, and some private providers.

The price of methods differed markedly between the public sector providing methods for free (with the exception of sterilization) and private sector charging prices ranging from nominal to retail. APROFAM's prices tended to be lower than those of private providers, but higher than those of religious clinics or other NGOs.

The data in Table 1 also show the year in which the method became available (on average) in these facilities. Pills and condoms were the first (dating back to 1989), followed closely by the IUD in 1990. The injectable -- currently the fast growing method in Guatemala -- became available in these four departments in 1995.

Table 1 also shows considerable differences in the availability of counseling and IEC materials. Whereas most facilities provided counseling (87 percent) and FP talks (86 percent), less than half had FP posters on the walls (41 percent), flipcharts available (33 percent), or pamphlets/fliers for clients (15 percent). APROFAM, government health centers and health posts tended to be far better stocked in audio-visual aids than hospitals or other private clinics.

For the facilities offering contraceptive methods, stock-outs in the last six months were uncommon. Facilities were most likely to report stockouts for injectables (even then, in only 12 percent of the cases), which is consistent with the growing in their popularity in Guatemala in recent years. Only 7 percent of facilities reported a stockout for pills and for condoms in the last six months.

The final portion of Table 1 provides information on the criteria for eligibility to obtain contraception at these different types of facilities with respect to age, consent of husband, and number of living children (e.g., potential barriers to access). Whereas most facilities (86 percent) gave condoms to clients under 18, the percentages dropped dramatically for other methods: pill (51 percent), injectables (43 percent) and the IUD (29 percent). As of 1997, two-thirds of the facilities required the husband's consent for reversible methods and 96 percent required it for sterilization. The majority of facilities also had requirements for a minimum number of children to be eligible for female sterilization (94 percent), IUD (70 percent), injectables (63 percent) and the pill (60

percent). APROFAM tended to be more liberal than other types of facilities on their eligibility criteria.

Must Mayan women travel farther to obtain contraceptives than their Ladino counterparts?

Table 2 presents data on the mean distance "as the crow flies" for women of reproductive age to the closest (a) facility offering family planning, (b) facility offering a particular contraceptive method, and (c) facility of a specific type (governmental hospital, health center, etc.). We present the data for all women of reproductive age, ladino women only and Mayan women only, in these four departments. The last column indicates the p-value for the test of equality of means between Ladino and Mayan women.

A key finding from this study is that **Mayans and ladinos in these four departments differed little in their physical access to family planning services.** On average, they lived within 2 kilometers of the nearest facility. Distances to facilities with specific methods ranged from 2 km (for pills and condoms) to 11 km (for sterilization). The two ethnic groups did not differ significantly in distance to:

- a facility offering some type of contraception;
- a facility offering specific methods (e.g., the pill, IUD, condoms, female or male sterilization); the exception was injectables;

- government health facilities or APROFAM;

The mean distance was the shortest to government health posts (3.5 kms) and centers (4.9 km), whereas the distance to religious clinics offering family planning was by far the greatest (31.4 km). Four significant differences emerge from Table 2. Ladino women had a shorter distance (2.7 kilometers) to a facility providing injectables than did Mayans (4.1 kilometers). However, Mayans lived closer to an APROFAM facility and closer to other NGO facilities offering family planning than did Ladino women in these four departments. This latter finding can be explained by the fact that the two predominantly Mayan departments (Sololá and Totonicapan) were much smaller in size than the two predominantly Ladino departments (Quetzaltenango and San Marcos), resulting in a shorter average distance to the department capital where APROFAM clinics are located. The significant difference by ethnic groups on distance to religious NGOs offering family planning should be interpreted with caution, given the small n's.

Do the characteristics of the closest facility differ for Mayans and ladinos?

As shown in Table 3, the characteristics of the closest facility did not differ significantly between Mayan and ladino women in these four departments on 63 of 75 factors tested. Exceptions in terms of availability of methods and materials include the following. The closest facility for Mayans (in contrast to ladinos):

- More likely to be an "other NGO" (13 vs. 2 percent);

- Was more likely to require a minimum number of children to get condoms (45 vs. 17 percent).
- Was less likely to have injectables (32 vs. 63 percent);
- Was less likely to provide condoms to clients under 18 years of age (76 vs. 91 percent);

In sum, there were relatively few factors on which the supply environment differed for the two groups. However, several of the exceptions (differences by ethnic group) provide insights into possible barriers for Mayans. For one-third majority of the Mayan women (33 percent), the closest FP facility did not have any Mayan speaking staff. Also, the restrictive eligibility criteria (limiting access) -- though generally applicable to both groups -- were more likely to be present in the facilities closest to Mayans than in those closest to ladinos.

Is physical access important to family planning users?

This analysis was undertaken on the assumption that physical access to family planning services facilitates the use of contraception. Indeed, previous analysis of these same data indicated that Mayans living within 10 minutes of an FP facility were more likely to use contraception than those living further away, controlling for other socio-demographic factors; the relationship did not hold for ladinos (Bertrand et al, 2001). However, the findings in Table 4 suggest that physical access is not a decisive factor in contraceptive use in these four departments of Guatemala.

This sample of married women included 276 users of modern methods (218 ladino, 58 Mayan). For 46 percent of these users, their closest facility was a government health post; yet less than 3 percent of them obtained their supplies from a government health post. In contrast, APROFAM was the closest facility for only 7 percent of respondents, yet 48 percent of these users obtained their methods from an APROFAM clinic. The data in Table 4 may actually overestimate the extent of use of the "closest" facility, since the respondent's source of contraception (e.g., health center) may be the same **type** as her closest facility (e.g., health center), without **being** the same facility (and the data do not allow us to establish this relationship with precision). Rather, from Table 4 we can conclude that at least 92 percent of users of modern contraception most recently obtained their method from a source **other than** the closest clinical facility.

The data in table 5 show the method mix for all users (n=276), APROFAM users (n=133), and users of non-APROFAM facilities (n=143). The findings suggest that users were interested in a specific method (e.g., 62 percent had had a female sterilization) and they went to a facility that was able to provide it. Of the 172 respondents who relied on sterilization, half (51 percent) had had the procedure at an APROFAM clinic, one-third (32 percent) at a government hospital. Users of the IUD and injectables were more likely to have selected APROFAM (72 percent) than an alternative clinical facility (28 percent). By contrast, for pills and condoms other clinical facilities were more attractive to users of these methods than APROFAM.

IV. Discussion

This analysis illustrates the utility of conducting facility-based surveys that can be linked to DHS household data. To the limited extent that "linked data" are available, they have proven extremely useful in evaluating the impact of FP programs and better understanding the FP supply environment.

One shortcoming of this study is that it does not document the role of community-based distribution (CBD) in FP service delivery. APROFAM established CBD in the early 1970's as a means of increasing access to services, especially in rural areas. The current analysis did not examine CBD, since CBD posts were not included in the 1997 Provider Survey. According to the latest DHS (1998), only 3 percent of users got their methods from a community worker (from APROFAM, 1.5; other community health workers, 1.5 percent), suggesting that their exclusion from this analysis is not a serious oversight.

The current study yields two important findings not previously available from DHS studies in Guatemala:

1) the family planning supply environment is suprisingly similar for Mayan and ladino women (at least in the four departments under study); and
2) the vast majority of FP users (at least 92 percent) obtain their contraceptive method from a location other than the nearest clinical facility providing FP.

These findings clearly refute our initial hypothesis that the differences in the supply environment explain the large gap in contraceptive use among ladinos (50 percent) and Mayans (13 percent). Rather, it suggests that access -- though it likely plays some role -- is not the deciding factor in contraceptive use, given that that vast majority of users in the study obtained methods from a facility other than the one closest to their home.

Although the current study does not directly address the question of "what then does matter?" the results point to higher quality of services, including the element of **method availability**. It is instructive that APROFAM -- the facility located at considerable distance from both Mayan and ladino respondents -- is the source of choice for obtaining contraception among users of both groups. The data in Table 1 explain why this may be. APROFAM clinics are as likely or more likely than other types of facilities to have good infrastructure (electricity and running water); full time staff available to provide FP; a full range of contraceptive methods; counseling, educational talks, and audio-visual materials,[10] and fewer eligibility restrictions for age, husband's consent (except for sterilization), and number of living children.

Although one can not establish causality from cross-sectional data, the findings in Table 5 suggest that potential users seek out facilities that can provide them with their method of choice. Sixty-two (62) percent of the users in this study bypassed closer

[10] Exceptions to this "full range" include one clinic that did not have spermicides (a rarely used method) and on other that lacked "other methods."

locations offering reversible methods to obtain sterilization at APROFAM or government hospitals. Users relying on IUDs or injections showed a marked preference for APROFAM (72 percent) over other clinical facilities (28 percent). However, the quality of services at APROFAM was not enough to lure users of pills and condoms to their facilities: 84 percent got their methods elsewhere.

One potential barrier for APROFAM is cost; it charges for the same methods that the government facilities give away free of charge. But neither cost nor physical access deterred the 48 percent of users who chose APROFAM over other services, suggesting that modern users show a strong willingness to pay (in time and money) for quality services, including their preferred method.

Should implementing agencies and donors then abandon their efforts to expand access in Guatemala? In our opinion, one cannot dismiss access as irrelevant to contraceptive use. The findings from the previous analysis of these same data are consistent with previous research showing that access may play some -- though not a determining role -- in contraceptive use. Indeed, without a minimum level of access, *there can be no contraceptive use*.

The current study does not directly test the role of quality in contraceptive use. Yet it is telling that APROFAM clinics, "closest" to only 7 percent of clients, were the source of contraceptive for 48 percent of users in these four departments. Among the Mayans, the demand for contraception is sufficiently low that all but the most motivated

(which is a very small group in comparison to neighboring countries) are unwilling to meet the time and monetary costs of contraception. Yet the evidence from these four departments is that once a minimal level of demand emerges, Mayans (and Ladinos) are willing to pay in travel time and money for higher quality services that include their method of choice. The "pull" toward specific methods (and the facilities able to provide those methods) merits attention in future research.

In sum, the programmatic implications of this analysis are the need for sustained efforts to improve quality of services, while maintaining the current level of access. The study also underscores results from previous studies, that Mayans often face language barriers (as well as cultural or social status barriers, although the latter generally go unmeasured) at FP facilities where staff speak Spanish only. The current analysis points to the need for more culturally appropriate services (two-thirds of the facilities studied did not have even one Mayan speaker on staff), yet the data were not available to explore this aspect of service delivery in detail.

In closing, we offer a conjecture for further exploration. Although motivated users may travel "beyond" the closest facilities for services, the presence of contraceptives (even if pills and condoms only) at local health centers and posts may influence community norms by making products more familiar to the local population. There is evidence from previous research (Entwistle et al., 1997) that the length of time that a contraceptive has been available in a community is positively related to contraceptive choice (controlling for other factors). Although the current analysis did not

explicitly test this hypothesis, the very presence of contraceptives in frequently used community facilities may cause additional discussion of them.

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Table 1: Characteristics of the Supply Environment by Level of Care/Sector

	Public Sector			Private Sector				
	Gov Hospital	Gov Health Center	Gov Health Post	APROFAM Clinic	Religious Clinic	Private Provider	Other NGO	Total
Number	9	48	169	4	18	23	25	296
Percent of Total	3.0%	16.2%	57.1%	1.4%	6.1%	7.8%	8.4%	100.0%
Days open per week	6.78	5.04	4.91	5.25	5.61	6.48	4.68	5.14
Hours open per day	13.7	8.3	8.1	9.5	7.7	11.4	7.6	8.5
# Weekly outpatient health visits	301.7	168.2	103.5	201.3	127.7	72.1	37.8	115.5
At least one interviewed employee speaks a mayan language	0.89	0.46	0.27	0.25	0.44	0.09	0.60	0.34
Proportion of facilities with:								
Running water	0.89	0.85	0.67	1.00	0.94	1.00	0.84	0.77
Electricity	1.00	0.94	0.72	1.00	1.00	1.00	1.00	0.83
Toilets for patients	1.00	0.69	0.50	0.75	0.83	0.92	0.84	0.63
# Family planning staff (full time)								
Doctors	1.75	0.79	0.19	1.25	1.25	1.00	0.87	0.45
Nurses	1.50	0.71	0.01	0.25	0.00	0.13	0.00	0.18
Nurse assistants	3.00	2.25	0.82	1.50	0.25	1.47	0.33	1.13
Rural health technicians	0.00	0.10	0.16	0.00	0.00	0.00	0.07	0.13
Methods Available:								
(proprotion of facilities with)								
At least one method	0.44	1.00	0.96	1.00	0.11	0.57	0.48	0.83
Pills	0.33	1.00	0.93	1.00	0.06	0.48	0.32	0.79
IUD	0.33	0.83	0.01	1.00	0.00	0.30	0.08	0.20
Injectibles	0.22	0.58	0.38	1.00	0.06	0.26	0.20	0.37
Condoms	0.33	1.00	0.89	1.00	0.06	0.39	0.16	0.74
Female Sterilization	0.33	0.00	0.00	1.00	0.00	0.30	0.00	0.05
Male Sterilization	0.11	0.00	0.00	1.00	0.00	0.17	0.00	0.03

Table 1: Characteristics of the Supply Environment by Level of Care/Sector (Continued)

	Public Sector			Private Sector				
	Gov Hospital	Gov Health Center	Gov Health Post	APROFAM Clinic	Religious Clinic	Private Provider	Other NGO	Total
Price for method (in quetzales):[1]								
Pills	0.00	0.00	0.01	3.75	1.50	3.17	1.10	0.23
IUD	0.00	0.00	0.00	24.25	n/a	85.00	16.67	10.60
Injectibles	0.00	0.00	0.78	19.00	31.13	52.50	19.03	4.24
Condoms	0.00	0.00	0.00	1.88	0.60	0.59	0.88	0.07
Female Sterilization	48.33	n/a	n/a	137.50	n/a	830.43	n/a	464.86
Male Sterilization	95.00	n/a	n/a	137.50	n/a	453.25	n/a	273.11
Year method first available:								
Pills	1990	1984	1989	1985	n/a	1990	1988	1989
IUD	1992	1991	1987	1985	n/a	1989	1992	1990
Injectibles	1995	1996	1996	1986	n/a	1991	1993	1995
Condoms	1990	1984	1990	1985	1970.0	1992	1992	1989
Any stock-outs in last 6 months								
Pills	0.00	0.02	0.10	0.00	0.00	0.09	0.00	0.07
IUD	0.00	0.08	0.00	0.00	n/a	0.00	0.00	0.05
Injectibles	0.00	0.14	0.11	0.25	0.00	0.00	0.20	0.12
Condoms	0.00	0.06	0.07	0.00	0.00	0.00	0.25	0.06
Family Planning: proportion of facilities where:								
Counseling provided	0.44	1.00	0.99	1.00	0.22	0.65	0.60	0.87
Meetings provided	0.50	0.96	0.91	0.75	0.75	0.40	0.67	0.86
Flipcharts available	0.00	0.50	0.39	1.00	0.00	0.00	0.20	0.33
Fliers available	0.11	0.25	0.11	1.00	0.00	0.00	0.28	0.15
Posters displayed	0.11	0.65	0.45	1.00	0.06	0.09	0.28	0.41

[1]US$1.00 = approximately 8 quetzales

Table 1: Characteristics of the Supply Environment by Level of Care/Sector (Continued)

	Public Sector			Private Sector				
Eligibility Criteria: (proportion of facilities)	Gov Hospital	Gov Health Center	Gov Health Post	APROFAM Clinic	Religious Clinic	Private Provider	Other NGO	Total
Provide method to women under 18								
Pill	0.49	0.56	0.48	0.92	0.67	0.62	0.42	0.51
Condoms	1.00	0.90	0.84	1.00	0.67	0.86	0.91	0.86
IUD	0.49	0.38	0.26	0.50	0.17	0.24	0.18	0.29
Injectibles	0.35	0.54	0.42	0.75	0.50	0.14	0.38	0.43
Female sterilization	0.00	0.04	0.04	0.08	0.00	0.04	0.09	0.04
Require husband's consent								
Pill	0.88	0.63	0.74	0.08	0.33	0.83	0.59	0.69
Condoms	0.97	0.74	0.80	0.25	0.33	0.89	0.91	0.78
IUD	0.88	0.74	0.84	0.17	0.33	0.76	0.64	0.78
Injectables	0.82	0.59	0.78	0.17	0.33	0.55	0.59	0.70
Female Sterilization	1.00	0.96	0.99	1.00	1.00	0.73	0.82	0.96
Require minimum # children								
Pill	0.69	0.55	0.66	0.08	0.17	0.61	0.35	0.60
Condoms	0.37	0.24	0.35	0.00	0.00	0.18	0.17	0.30
IUD	0.86	0.69	0.72	0.67	0.00	0.60	0.73	0.70
Injectables	0.52	0.56	0.68	0.54	0.00	0.49	0.58	0.63
Female Sterilization	1.00	0.97	0.96	1.00	1.00	0.61	0.86	0.94

Table 2: Mean Distances (in km) to Facilities offering Family Planning for Mayan and Ladino Women

	All Women	Ladinos	Mayans	P-value
Closest medical facility	2.06	1.95	2.14	0.578
Closest facility offering:				
Any contraceptive method	2.10	1.98	2.19	0.568
Pills	2.11	1.98	2.20	0.549
IUD	5.26	6.40	4.52	0.280
Injectables	3.53	2.65	4.11	0.012
Condoms	2.15	2.00	2.25	0.491
Spermicides	10.08	9.50	10.46	0.650
Female sterilization	11.27	10.48	11.79	0.550
Male sterilization	11.27	10.48	11.79	0.550
Closest:				
Gov hospital	17.37	16.88	17.69	0.738
Gov health center	4.88	5.05	4.77	0.799
Gov health post	3.53	3.45	3.58	0.728
APROFAM clinic	18.38	22.33	15.81	0.034
Religious affiliation	31.42	23.72	36.44	0.000
Private provider	12.07	10.77	12.92	0.326
Non-APROFAM NGO	11.61	14.45	9.76	0.008

Table 3: Characteristics of Closest Facility, by Ethnic Group

	All Women	Ladinos	Mayans	P-value
General Facility Info				
Closest Facility is:				
Gov hospital	0.03	0.01	0.04	0.160
Gov health center	0.26	0.28	0.24	0.638
Gov health post	0.51	0.50	0.53	0.805
APROFAM clinic	0.02	0.02	0.03	0.361
Religious affiliation	0.01	0.02	0.00	0.321
Private provider	0.08	0.15	0.04	0.146
Other NGO	0.09	0.02	0.13	0.031
Days open per week	5.12	5.23	5.05	0.137
Hours open per day	8.23	8.27	8.21	0.886
# Weekly outpatient health visits	117.66	123.13	114.10	0.565
At least one interviewed employee speaks a mayan language	0.46	0.14	0.67	0.000
Proportion of facilities with:				
Running water	0.82	0.71	0.90	0.029
Electricity	0.91	0.93	0.89	0.447
Toilets for patients	0.58	0.56	0.59	0.757
# Family planning staff (full time)				
Doctors	0.58	0.50	0.64	0.435
Nurses	0.21	0.19	0.22	0.711
Nurse assistants	1.41	1.77	1.16	0.265
Rural health technicians	0.13	0.02	0.20	0.004
Methods Available: (proprotion of facilities with)				
At least one method	0.88	0.90	0.86	0.538
Pills	0.85	0.87	0.84	0.711
IUD	0.26	0.29	0.24	0.605
Injectables	0.44	0.63	0.32	0.002
Condoms	0.77	0.78	0.76	0.807
Female sterilization	0.07	0.12	0.03	0.200
Male sterilization	0.05	0.09	0.03	0.365
Price for method (in quetzales):[1]				
Pills	0.44	0.86	0.15	0.343
IUD	13.64	25.15	2.55	0.275
Injectables	5.78	8.82	1.97	0.370
Condoms	0.02	0.01	0.03	0.239
Female Sterilization	516.99	638.46	189.25	**
Male Sterilization	151.51	178.64	94.49	**

[1]US$1.00 = approximately 8 quetzales

** P-value can not be computed since estimates based on only one cluster

Table 3: Characteristics of Closest Facility (Continued)

	All Women	Ladinos	Mayans	P-value
Year method first available:				
Pills	1986	1985	1987	0.509
IUD	1989	1986	1993	0.023
Injectibles	1995	1994	1996	0.407
Condoms	1987	1986	1988	0.272
Any stock-outs in last 6 months				
Pills	0.06	0.05	0.07	0.640
IUD	0.00	0.00	0.00	n/a
Injectibles	0.13	0.15	0.11	0.762
Condoms	0.05	0.07	0.03	0.495
Family Planning: proportion of facilities where:				
Counseling provided	0.91	0.93	0.89	0.479
Meetings provided	0.86	0.85	0.87	0.800
Flipcharts available	0.40	0.32	0.45	0.192
Fliers available	0.21	0.14	0.25	0.148
Posters displayed	0.44	0.38	0.48	0.295
Eligibility Criteria: (proportion of facilities)				
Provide method to women under 18				
Pill	0.44	0.49	0.40	0.353
Condoms	0.82	0.91	0.76	0.019
IUD	0.18	0.25	0.13	0.117
Injectables	0.44	0.45	0.44	0.892
Female sterilization	0.02	0.00	0.04	0.263
Require husband's consent				
Pill	0.66	0.64	0.67	0.736
Condoms	0.77	0.77	0.77	0.940
IUD	0.80	0.74	0.84	0.179
Injectables	0.69	0.61	0.75	0.069
Female sterilization	0.98	0.98	0.97	0.815
Require minimum # of children				
Pill	0.58	0.55	0.60	0.609
Condoms	0.33	0.17	0.45	0.002
IUD	0.79	0.79	0.80	0.947
Injectables	0.66	0.61	0.69	0.297
Female Sterilization	0.94	0.94	0.93	0.834

Table 4: Closest Facility and Actual Source for Contraceptive Method among Family Planning Users

	Closest Family Planning Facility							
Source of Method	Gov Hospital	Gov Health Center	Gov Health Post	APROFAM Clinic	Religious Clinic	Private Provider	Other NGO	Total
All Women:								
Gov Hospital	**7**	17	17	4	2	1	8	56
Gov Health Center	2	**3**	2	0	0	0	0	7
Gov Health Post	0	2	**4**	0	0	0	0	6
APROFAM Clinic	8	41	70	**8**	2	0	4	133
Religious Clinic	0	0	0	0	**0**	0	0	0
Private Provider	2	16	15	5	0	**0**	0	38
Other NGO	0	0	0	0	0	0	**0**	0
Not at a facility	1	12	18	3	0	0	2	36
Total	20	91	126	20	4	1	14	**276**

Note: the cases in which the user obtained her method from the closest facility are shown on the diagonal in bold (22 of 276 = 8.0%).

Table 5. Distribution of Methods Used and Source of Method

		Source of Method[11]	
	All users N=276	**APROFAM N=133**	**Other Clinical Facility N=143**
Female Sterilization	**62.1**	**51.2**	**48.9**
Male Sterilization	**2.2**		
Injectable	**8.7**	**72.3**	**27.7**
IUD	**8.3**		
Pills	**11.9**	**15.7**	**84.3**
Condoms	**6.9**		
Total	**100.0**		

[11] Because of the small n's, we combined the six methods into three categories: (1) female and male sterilization, (2) injectable and IUD, and (3) pills and condoms.

Figure 1.
Distribution of Facilities: Closest Type of Facility vs. Actual Source Among FP Users (n=276)