ASSESSMENT OF THE FERTILITY IMPACT OF FAMILY PLANNING PROGRAMMES IN EGYPT

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1. Introduction:

Egypt is currently facing an over population problem. It is one of the countries which still facing the awkward growth rate estimated by about 2.8% in 1986 (CAPMAS, (1987). However, the first national family planning programme has been started early in Egypt, in 1966. This programme started in a form of largely medical services for the population, but has moved to amore comprehensive population strategy, which follows the broad national socio-ecnomic strategy. Fertility in Egypt as awhole remains high if it is compared with many other countries. However, there is evidence that it has declined during the last decade (1980-88).

According to the last survey (EDHS, 88) TFR, the measure of current fertility was estimated by about 4.4 children for each women during the period 1986-88, compared with 5.2 children in the 1980 EFS, i.e., by about 15% of fertility decline during this period. However, the corresponding increase in contraceptive use during this period was of about 60% [from 24% of c.m.w. in the 1980 EFS to about 38% of c.m.w. in the 1988 EDHS]. General feeling is that the FPP's are not successful in Egypt. Our objective is to assess the fertility impact of FPP in Egypt. Our hypothesis in this tudy is that FPP in Egypt has played arole, accordingly marked change in fertility of the Egyptian women have actually occured. However, this actual change has not been substantially observed in the conventional measures of fertility

due to the operation of other entervening factors. Thus our entry point is to search into how could increase in contraceptive use do not result in lower fertility. Fertility outcome is the result of the interaction between program & non-program factors. FP behavior is only one of anumber of important proximate variables related directly to fertility, others such as age at first marriage, breast feeding, and abortion operate on the same direction. The frame work of study proceeds systematically in the following steps:

1- The analysis of fertility determinants.
2- The analysis of fertility trends in Egypt.
3- The analysis of FP trend in Egypt.

making a causal attribution between 1,2, & 3.

2. The Experience of the Family Planning Programmes in Egypt:

a) Before 1980:

The previous surveys (NFS (1974/75) & EFS (1980) have strissed that:

- The Egyptian women have been started FP practice at alater stage of their child bearing if they compared with other countries. Overall 86% of women have ever used one of the contraceptive methods when they have 4 or more children. According to the NFS (1974/75), about 67% of c.m.w. in Egypt at the time of this survey had never used or tried the use of FP methods. This percentage was about 83% of women in rural areas, while it was 43.4% of women in urban areas. The results of EFS (1980) has declared that family planning

still has far to go in Egypt if asignificant reduction in fer-
tility of the whole society is to occur. There was awide gap
between knowledge of contraception and the contraceptive use
which indicate to the low motivation of the Egyptian women
at that time toward limiting their family size. The reported
level of contraceptive use among currently married women
was about 24% according to the results of the EFS (1980),
ranged between 40.4% in ruban area, and 12% in rural areas.
The pill was the most recognized method, known by about 75%
of all current users, knowledge of methods other than the pill
was far from universal in Egypt at the time of the EFS (80).

The large differentials in contraceptive use between
geographical areas in Egypt was evident.

The high level of in consistency between intention and
practice was apparent especially in rural areas, which re-
flect the low motivation toward the use of FP at this time.

This incosisentcy may also be due to lack of information
or services of FP, infact all evidence at this time has indi-
cated to the large differentials in access to contraception by
region. Access was more difficult in rural areas in particu-
lar in rural upper Egypt if it measured by knowledge of
source of supply, travel time to the source of supply or costs
of method.

b) <u>Family Planning in the Period (1980-88):</u>

The present survey (EDHS, 1988) demonstrates the role of
the Egyptian FPP during the period 1980-88, in the following
aspects:

- Knowledge of FP
- Contraceptive use
- Attitude toward FP
- Availability, accessibility, & satisfaction with methods.

i) Contraceptive Knowledge:

Knowledge of FP for both methods and for service provi-
ders is almost wide spread all over Egypt. Overall 98%
of all e.m.w. Know at least one contraceptive method.
The pill was the most widely recognized modern method,
known by about 97% followed by the IUD 93%. The results
of the EDHS (1988) indicate to the substantial role played
by the radio & TV. for FP messages especially the TV.
which had proved to be more successful in reaching
women in particular in rural areas..

ii) Contraceptive use:

According to the the last servey (EDMS, 88) 57% of all
ever married women in Egypt have ever used a contrace-
ptive method, ranged between 75% in urban areas to
about 41% in rural areas. The percentage of ever users
for spacing their child bearing has been increasing during
the last decade. Ever users are almost divided equally
between limiters & spacers.

However, the level of current use has reached to
about 38%, ranged between about 52% in urban areas to
about 25% in rural areas. Infact the level of current
use of contraception has substantially increased during
the period. The reported level in 1988 increase by
about 60% of that recorded in 1980.

The more stricking   observation is that the prevalence
rate appeared to have increased at afaster rate in rural
areas than in urban areas during this period.   The rate
of current use in urban areas was more than 3 times that
of rural areas in 1980, while it was nearly doubled the
rate in rural areas in 1988.   This means that the FPP
in Egypt has played a substatial role in rural areas
during this period.

It is abvious that major findings in the method-mix
during the period 1984-88 had occured, the shift forward
using the IUD.   The proportion using the IUD almost
doubled during the period 1984-88 (from   8.4 of all c.m.w.
in 1984, to 15.6% in 1988) also it has a higher continua-
tion rate (more than 45 month) which indicate that the
IUD has proved to be the most efficient and the most
appropriate method in limiting briths.

iii)   Attitude toward FP: All attitudiual indicators indicate
to the positive and increasing attitude to ward FP.   The
approval of FP now become universal among all currently
married wormen.

3.   <u>Data Sources & Methodologies:</u>

The data used for this study comes mostly from the following
surveys:

  - The EFS (1980) conducted by the CAPMAS in 1979/80.
  - The ECPS (1984) conducted by the CAPMAS in 1983/84.
  - The EDHS (1988) conducted by the NPC in 1988.

These Demographic Surveys have provided us with the data
needed for assessing the fertility impace of the FPP's in Egypt
in particular in the period 1980-88.

Four different evaluation methods have been employed for measuring the impact of FPP on fertility in Egypt:

- The standardization apporach.
- The prevalence method.
- The multivariate areal analysis.
- The log linear model.

The standardization method should be applied primarily. It's effectiveness lies primarily in the capability of determining whether fertility, as measured by the CBR (or the GFR), has changed at all in the area and during the period under study by decomposing the change in the GBR to its demographic components parts: proportion of women of reproductive ages; Age structure of women of reproductive ages, proportion of married women, and martial age specificl fertility rates, however this method cannot provide adirect measure of programe impact on fertility, secondly the prevalence method provides direct impact measures of contraception either from programme or/and non programme use on fertility. It produces the number of births averted as well as the reduction in the natural CBR that results from the use of contraception; a single application of the procedure (for one specific year) produces these estimates for one year, but repeated applications for different years yield a time series of births overted and the other impace measure. Thirdly, The multivariate areal analusis considered to be the natural approach for this topice. This method is congruent in many ways with the problem of measuring the effect of the FPP on fertility, especially in those countries which characterized with a considerable variability within its geographical areas, as for Egypt.

It permits of the estimation of the relative impact of the programme & non-programme factors. In the multivariate areal analysis, geographical areas are the units of analysis and the focus will be on observed aggregate levels of fertility, we have

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adopted a general frame work that views fertility as a function of other demographic characterstics, the level of development or modernization and inputs from the program. Using path analysis technique is useful in this case in explicating the linear causal model as well as it provides us with estimates of direct & indirect effect of the specified independent variables on the dependent variable. Finally, the last method applied is the log-linear analysis. This method providesa systematic approach of analysis and for discovering the kind of the relationships that may found in contingency table. It provides a powerful addition for the analysis as well as it provides estimates of the magnitude of effects of interest or it allow the relative impact of different effects to be judged. However the main problem we have faced im employing this analysis is that it requires an access to one of the computer program for executing the iterative in case of three or more variables, so we have restricted the analysis of this method for the Egyptian data to the case of only two dimensional tables.

4. Results:

The results of the application of the four evaluation methods are consistent and go parallel with the tabulation analysis. The application of the standardization approach in the period 1980-88, based on data for the EFS (1980) & the EDHS (1988) has revealed a real decline in the CBR by about 6 per thousand during this period (from 38 per thousand in 1980 to about 32 per thousand in 1988). About 3 per thousand of this decline was due to change in marital fertility, and 2.46 per thousand of the decline in the CBR was due to change in proportion of married women, while the last proportion of decline in the CBR, 0.32 perthousand was due to change in age structure. The results of the decomposition of the change in GFR has also showed, that GFR has declined during this period (1980-88) by

about 27 per thousand (from 165.6 in 1980 to 138.7 in 1988). About 13.48 of this decline was due to change in marital fertility, and about 10.7 of the decline was due to change in martial status, while the least decline (the same as in the case of the CBR) 1.37 in GFR was due to the change of age structure of women in reproductive ages. The application of the prevalence method separately in 1980, 1984, and in 1988 making us of the data from the corresponding surveys [EFS (1980), ECPS^2 (1984), and EDHS^C (1988)] indicate that; atotal of 875000 births were averted in 1980 as a result to the prevalence of contraceptive use in this years. This number of births a verted was responsible of about 16.3 per thousand reduction in the natural CBR. A total of 833829 briths were averted in 1984 which was responsible of about 13.8 per thousand reduction in the natural CBR as aresult to the prevalence of contraceptive use in this year. Finally a total of 940799 births were averted in 1988 as result to the prevalence of use in this year which was responsible of about 17 per thousond reduration the natural CBR.

The results of the application of the multivariate areal analysis in 1976 & 1986, using data values of the governorates in Egypt (in the two years), and using multiple regression by the ordinary least square. Suggesting two models (equations) for analysis in each case, in the first model we regress the selected socio-economic, demographic and FP variables on the indicator measures of fertility (TFR & CBR), while in the second model (equation) we have regressed these selected socio ecnomic, demographic, and FP input variables on the output indicator of FP variable (contraceptive use/effectiveness rate).

We have also attempted the multivariate analysis (by the same way) in 1980 making use of data from the EFS (1980). In this case the number of cases would be large enough to give more precis results than the previous cases. First for all Egypt, then for each of the urban areas & rural areas in Egypt separately.

Mean number of children ever born (CEB) is the indicator measure of fertility in this case. The selected explanatory variables may differ slightly in each case by adding one variable in some cases or deleting another one to examine the accuracy of the results in each case. For example, we used the contr.ceptive use/effectiveness rate (CPE)-Number of FP clinics (FPC)-proportion of illiterate women (Fill)-proportion of working women (Fwork) and density (DENS) as the explanator variables in 1976 & 1986, while the CBR is the depent variable. In 1976 (when we used TFR instead of CBR) we added IMR to the explanatory variables. In 1980, we used age at marriage No. of living children, No. of desired children, illiterate women, working women, proportion knowing source of method, and current use of contraception of modern methods as the explanotory variables, while the dependent variable was CEB. The results of these different cases has revealed that:

- Carrying out the multivariate areal analysis in 1976-using TFR as the indicator measure of fertility-has showed that the selected variables in this case are to alarge extent explain the variation in TFR (R^2=0.93).

The path coefficients or the standardized partial regression coefficients (Beta) which represent the direct effect on TFR, are very low for FP variables (Beta = 0.145 for CPE & Beta = 0.2526 for FPC), which may interpeted as FPP was newly introduced at that time, thus it appeared to have no significant effect on fertility at that time. However the proportion of illiterate women (Beta = 0.799) as well as IMR (Beta = 0.561) appeared to be significant and have the strongest direct effect on TFR. They both lead to increasing fertility.

Using the CBR instead of TFR in the previous case (1976) indicate that this variable is not sensitive to any change as a

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results to change of these explanatory variables ($R^2 = 0.57$).
FP variables also in this case seemed to be insignificant and
have no effect on fertility measure, while Fill have the strongest
effect on CBR in this case (Beta = 0.741). However in both
cases, either we used the TFR as the indicator of fertility or
the CBR, these socio-economic, demographic, and FP input varia-
bles have astrong explanatory power to variation in CPE,
($R^2 = 0.89$).

Illiteracy is the most effective variable on contraceptive
use/effectiveness rate (B= -0.924)

In 1986, using the CBR as the indicator of fertility, and
contraceptive use/effectiveness rate, FP clinics, density, pro-
portion of illiterate women/percentage of women in labour
force as the explandtoryy variables. The general model has
showed that these selected variables did not explain the
variation in CBR to a large extent (R=0.62). However, the
role of contraceptive use/effectiveness rate was obvious, it
has the largest direct effect on fertility (Beta = - 0.532) as
well as the FP clinics (Beta = -0.32), which indicate that
the role of the FPP has actually appered on fertility. In
the second model where the contraceptive use/effectiveness
rate is the dep. variable indicate that in 1986 the selected
variables (FP clinics-illiterate women-working women-density)
to a large extent explain the variation in the contraceptive
use /effectiveness rate ($R^2 = 0.79$). The proportion of illi-
terate women seemed to be the most effective variable on
contraceptive use/effectiveness rate (Beta = -0.51003), followed
by the work-status of women (Beta = 0.353), the two variables
have a significant effect on contraceptive use/effectiveness
rate.

Carrying out the multivariate analysis in 1980 making use of the data from the EFS (1980) by the same way show that enlarging the number of sample size as in this case provide more precise measures. The correlation matrices between all variables show that the relationships among socio-economic development, FP, and fertility go parallel with the theoretical rationale. The coefficeint of determinant was high in all cases (R^2 = 0.79 for total Egypt, R^2 = 0.82 for urban areas, R^2 = 0.77 for rural areas) which indicate that the selected variables to alarge extent explain the variation in fertility (Mean No. of children ever born).

Carrying out path analysis in all cases (total Egypt-Urban & Rural areas) which indicate the comparable weights of the effects of the various independent variables on fertility measure, show that the number of living children represents the largest direct effect on increasing the No. of CEB in all cases (Beta = 0.867, 0.871, 0.868 for total, urban and rura respectively). Age at first marriage represent the largest direct effect on decreasing the no. of CEB (Beta = - 0.76, - .082, -.069 for total, urban, rural areas respectively).

All the independent variables (Age at marriage- No. of living children- No. of children desired-illiterate women-work status of women-knowledge of contraceptive use, and current use of contraception) have proved to be significant in this case.

)' Finally the results of applying the log-linear analysis in 1980 and 1988 are in accordance with the theoreticale rationale of the relationship between FP, socio-economic variables and Fertility. In both years contraceptive use increase with the increasing level of education, and among women who are working especially for each. This conclusion is more abvious in 1988 than in 1980 which indicate that the role of education and work-status of women are abvious on FP practice.

5. Conclusion and Policy Implications:

1. Egypt is characterized with a considerable variability in socio economic development, FP, and Fertility. The high fertility which was prevailing in Egypt as a whole comes mostly from the high level of fertility in rural areas.

2. However a significant progress has been made during the last decade (1980-88) in addressing the population problem in Egypt. Fertility levels have declined steadily during this period. The urban women have been leading the transition to lower fertility, as well as urban-rural differentials are begining to narrow as the EDHS (1988) results indicate. The pace of fertility decline has been somwhat more rapid among rural than urban women.

The most rapid decline in fertility has been in the youngest age groups, supporting the observation about the narrowing in the prime childbearing period and increasing age at first marriage. This is consistent with the trend toward delaying marriage.

3. All evidences show that family planning programme in Egypt has realized a considerable progress in the last decade in spreading knowledge & approval of FP, in increasing the prevalence of contraceptive use, in supportive the positive attitude toward FP practic , especially in rurall areas, a major finding is that the prevalence rate has been increasing at a faster rate in rural areas than in urban areas during the last decade. The rate of current use in urban areas was more than 3 times that of rural areas in the 1980 EFS, while it is nearly doubled the rate in rural areas according to the results of the EDHS (1988). So, it is expected that the FPP in Egypt has played a substantial role especially in the last decade (1980-88).

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This conclusion was also confirmed through the application of the Methodologies of measuring the impact of FPP on fertility to Egyptian data in the period, all methods indicate to the decline in fertility which has occured during this period, the prevalence method has yielded direct estimates of N̲o̲. of birth averted due to contraception use and the implied reduction in the CBR . The results of the prevalence method in the three years (1980-1984-1988) has indicated a substantial effect as a result to contraceptive use, the multivariate areal analysis has indicated to the substrantial role of FP variables in 1988, while these variables were not significant in 1980. However, it has proven that both education and the work-status of women are apowerful predictor of contraceptive use and effectiveness rate, as indicated also through the application of the log linear model which has showed that contraceptive use increase with the increasing level of education and among women who are working in particular for cash.

However, the role of the FPP in Egypt may be promoted by the avoidance of many aobstacles and continuing chollenges which facing the Egypt family planning programe in particular through:

- Avoidance of unplanned & unwanted births. The wanted TFR for the five years period before the EDHS (1988) survey is nearly 25 percent lower than the actual TFR (i.e., if the unwanted biths are prevented, fertility would average only 3.6 births per woman compared to the actual average of 4.7 births, one child more than they actually want).

Avoidance of high risk pregnaneies:

It has found that about 60% of the total births occuring in the five year period before the EDHS (88) were the outcome of high risk pregnancies (i.e for too old women, more than 35

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years, for too young women, or for women having many children]. We can avoide this percentage of high risk pregnancies also.

- Discontinuation of contraceptive use. One in three women (33%) had stopped using contraceptive methods mainly for side effects of these methods or they become pregnant or want to be pregrant.

Side effect was especially evident among the pill users. The most compliant from pill users was that they were not given enough information by the staff of the place where they obtain their methods, while cost was the major source of dissatisfaction for IUD users, however it proved that it is the most efficient method in preventing pregnancies.

Thus FPP efforts should be targetted first for those women who are in need to F , i.e., who do not want another child, or want to delay having births and are not using contraception in particular in rural areas (especially rural upper Egypt), and providing FP counseling and methods are necessary in order to assisst them in realizing their reproductive desires as well as increasing the efficiency of Fp methods.

- In fact, the high level of the inconsistency between attitude and practice (reproductive motivation behavior gap), suggest that we are in urgent need to do our best for improving the effeciency of the FP delivery system as well as to adopt strategies which help in strengthening the motivation of women toward the actual use of FP especially in rural areas.

- No doubt that the development approach is needed for achieving the targets of lowering fertility in the Egyptian population policies. All evidence indicate that socio economic development and FPP are most effective when they go to gether. It is abvious that urban governorates and the cities of lower Egypt have the highest socio economic ranking, the lowest fertility, and the highest rate of contraceptive use, while rural areas especially in upper Egypt has the lowest socio economic ranking, the highest fertility and the lowest contraceptive use rate.

Thus we should do the best also for upgrading population characterestics toward increasing the level of education, participation of women in labour force, promoting employment, and raising the production rate.....etc.

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