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Reproductive Behaviors' Determinants in Greater Cairo's Slums, among middle aged female, 2014

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Abstract: At a time when Egypt is suffering from the high population increase, which may be one of the biggest challenges facing Egypt, we find a rapid spread of informal areas in Egypt, that represent about 37.5% of the total urban mass in the Republic of Egypt. The study aimed to study the level and trends of reproduction of the population in slums in Greater Cairo, and change in the speed and density of fertility among slum dwellers. We used advanced statistical analysis of field study data for a sample consisting of 667 households, and 595 women of childbearing age eligible for individual interviews. We designed a statistical model of reproductive behavior for women in the slums of the Greater Cairo Region based on Demographic, social and economic characteristics and intermediate determinants affecting the current and future reproductive behavior. Only 11 indicators that have direct or indirect effect on fertility in women were produced, and compared with the same indicators in the EDHS 2014. The study also used life tables and the succession rate Reproductive to identify early fertility changes, based on a scale (B60) for every transmission between births starting the first marriage. We provided a set of recommendations, including the expansion of educational services while encouraging females to enroll in education, and conducting a national survey for slums in the Arab Republic of Egypt with all its categories to measure knowledge and trends towards reproductive health and reproduction to explore the shortcomings.

Keyword(s): Population overgrowth-Reproductive Behaviors-Statistical model-Educational services.

1 Introduction

The increasing environmental challenges Egypt faces are a result of the population increase, especially with regard to water, sanitation, pollution, the growth of informal settlements and the weak ability to control the waste disposal system, which will have repercussions on the health status of the Egyptian citizen [1].

The problem of slums is one of the problems that many developing countries suffer from, just as some developed countries suffer from it, even if the dimensions and severity of the problem differ. Slums are a serious social, economic and demographic problem. A phenomenon that characterizes most of the third world cities, and the number of slum-dwellers in the new millennium was not limited to a few thousand in a few cities, but rather they include one out of every three city-dwellers, so that their count is a billion, which is one sixth of the world's population [2].

Egypt has endeavored to confront the phenomenon of increasing population growth over the rates of economic growth, and the consequent high rates of unemployment, illiteracy, education dropouts, and the deterioration of public services (health - education - security .....), which may also be affected by the phenomenon of the spread of societies Randomness in most of its governorates [1].

Egypt developed many population strategies that dealt with the population issue from the nineties until 2014 prepared the National Population and Development Strategy 2015 - 2030, these strategies aimed at achieving a reduction in population growth rates by raising the percentage of women's use of family planning methods thus decreasing the total fertility rate. However, the results of the 2014 Population Health Survey [3] showed that the total fertility rate in the Arab Republic of

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Egypt has increased to 3.5 children per woman compared to three children per woman in 2008, and the percentage of women's use of family planning methods decreased to 58.5% compared to 60.3% in 2008.

During the last decade and with the spread of slums, especially in the governorates of Greater Cairo (Cairo - Giza - Qalyubia). Opinions have increased indicating the impact of these slums on Egyptian society, because the increase in the phenomenon of slums leads to an impact on population growth rates and an increase in the demographic and social characteristics related to health. Education, unemployment, the status of women and their participation in society, in addition to that they lead to the transformation of the city into a rural characteristic with the spread of new social and cultural patterns, making it a source of social tension, increased crime rates, drug consumption, and loose security [4].

Given that the Greater Cairo Region includes about (59%) of the population of slums in the Republic, it is necessary to focus on the informal areas in this region. In this context, the role that the demographic characteristics of slum areas play in influencing women's fertility in slum areas, and consequently their effect on population growth, should be recognized in a way that exacerbates facing the population problem in the current circumstances.

This study aims to study the level and trends of reproduction of the population in slums. Through measuring the level of fertility in the slums in Greater Cairo and identifying the determinants of fertility and the change in the speed and density of fertility among slum dwellers. Based on the assumptions that married women in slums have higher fertility rates than women in the rest of the Republic. Also low demographic, economic and social determinants have an impact on the number of births that a woman reproduces.

2 Material and Methods

The study results based on the raw data in the study of the factors of the increase in the spread of informal settlements in the Greater Cairo Region, which was carried out by the Central Agency for Public Mobilization and Statistics in 2014 [5] in cooperation with the National Council for Population. In addition, the administrative approvals and the women's, participating in the study, approval have also been obtained. The study's sample include the data of households from three random areas (Hakkar Sakkini in Cairo - Ezbet El-Bekbashy in Giza - El-Zarib in Qalyubia) in the three governorates of the Greater Cairo Region, which is a random sample of households with 667 households, of which 230 households from Cairo, 224 households from Giza and 213 households from Qalyubia.

Two questionnaires have been used: The first questionnaire is specific to the household and it includes data on age, marital status, education, occupation, disability, housing conditions and family property of durable goods. The second questionnaire was completed from 595 eligible women for the individual interview (married, divorced or widowed woman aged 15-49 years, usually assessed with the selected family). It includes sections on the background of the interviewee and the characteristics of the husband - date of pregnancy and childbirth - mother and childcare and trends of childbearing - exposure to violence - the most important problems and suggestions [4].

Our target population were married women in the childbearing age (15-49 years) from three random areas (Hakkar Sakkini in Cairo - Ezbet El-Bekbashy in Giza - El-Zarib in Qalyoubia) in the three governorates of the Greater Cairo Region.

The study used some methods such as the methods of demographic analysis, B_{60} method of proposed life tables [6], Parity Progression Ratios and mathematical models for in-depth study of fertility patterns, the analysis of changes and the study of the effect of birth spacing on fertility. Path Analysis was used for 18 indicators to study and measure the direct and indirect effects of the determinants and to determine the relative importance of both direct and indirect effects by developing a statistical model for the reproductive behavior of women in the slums of the Greater Cairo region. Based on demographic, social and economic characteristics and the intermediate determinants affecting the current and future reproductive behavior. Only 11 indicators have been concluded which have a direct or indirect impact on fertility or women's intention to have children. The variables that have been identified in the previous model and are available in Demographic and Health Survey 2014 [3] have been used to study and measure the direct and indirect impact of the determinants. Moreover, to determine the relative importance of both direct and indirect effects by developing a statistical model for the study data in comparison with DHS 2014's data.

3 Results and Discussion

Results have showed that the total reproduction rate in the study sample was 4.19 child for every married woman in childbearing age, which is higher than the rate of the republic, which is 3.5 child for every woman. Changes in fertility were examined by using Life Table as it is considered the most suitable way to analyze the spaces between births. In addition, the study used the same approach used by Hobcraft, and Rodriguez (1980), [6] to measure the values of B_{60}. These values represent the percentage of women who achieved a higher fasten rank for a subsequent child within five years (i.e., 60 months)

than the previous child. Ranks were calculated for every woman in childbearing age and their moving from one rank to another one.

B_{60} is a sufficient indicator to measure the change in fertility levels (Quantum) throughout the upcoming five years after marriage, which is very close to the indicators of reproductive sequencing rates (PPRs), which were calculated for full-fertility groups. However, the data represent past fertility and does not take into consideration the effect of recent fertility trends.

Throughout the analysis and following-up with the transition stages of reproduction levels to illustrate family building's steps which include successive stages the woman passed through starting from getting married until having the first child (1 – M), followed by the second stage after having the first child until having the second one. Then followed by a third stage starting from having the second child until having the third one and it goes on until having a full-sized family. In addition to the measurement of mediator between the periods between births (Median), which shows the time, that half of the women took who are continuing in childbearing to move to the highest level in childbearing as an indicator shows the speed in reproduction.

The study was based on the values of B_{60} calculated from the life tables for each transmission in the number of births starting from the date of the marriage of the woman until she had the first child. Then from the first child to the second child, then from the second child until the third child and so on until moving from the fifth child to the upcoming one.

By analyzing the study sample data by using life tables through using the values of B_{60} for every transmission in the number of born children and the average value of the period between births for each transmission period in the number of births, a change in the intensity of the birth is indicated (Quantum). To explain, the rate of transition in obtaining the first child has decreased in comparison with the transfer rate for the second child from about 55% to 53%, and then there was a gradual increase in the rate of transfer of the higher born levels starting from the third to the fifth child and above, reaching 77%. Based on the results of the study entitled "Factors of the growing spread of slums in the Greater Cairo Region and their impact on demographic and social characteristics". Illustrating that B_{60} Values indicate that there were variable rate levels as it can be found that 48% of women in the age group (20-25) have already two children and represent about 36% and they continue to move to the third child in five years. In addition, about 62% of the women, who have three in the same age group (20-25), continue to have the fourth child and more than three quarters of the women in that group moved to the fifth child and more . Also it was found that 79% of women in the age group (30-34) have already two children and represent about 13% as they continue in moving to the third child in five years. Moreover, about 84% of women who already have three children and in the same age group (30-34) continue to move to the fourth child, as illustrated in table (1).

Table 1: B_{60} values and proportion of women who are exposed to a transition in reproduction levels.

Age Groups	**Moving between Reproduction levels**				
	M-1	1-2	2-3	3-4	5-More
	B_{60} Values				
20-24	0.3636	0.4916	0.4799	0.6246	0.765
25-29	0.566	0.5838	0.6575	0.7818	0.9384
30-34	0.5959	0.68	0.7886	0.8374	0.9434
35-39	0.7218	0.7469	0.8984	0.956	0.9677
40-44	0.6966	0.7232	0.9043	0.8256	1
45-49	1	1	1	1	1
% of women at risk of moving between Reproduction levels					
15 -1 9	15.9	17.6	16.4	16.2	18
20-24	31.9	29.4	36	35.6	42.7
25-29	25.5	28	27.4	25.9	18
30-34	16.2	15.9	12.7	13.4	13.5
35-39	5.7	4.8	3.7	3.2	4.5
40-44	1.8	1.2	1.4	1.4	0
45-49	15.9	17.6	16.4	16.2	18

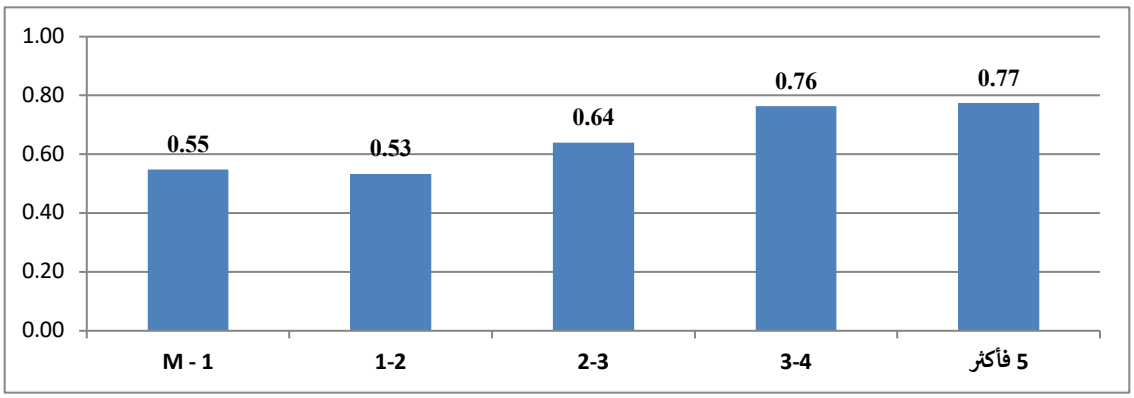

Fig.1: The trend in patterns of B_{60} values between births in the study sample.

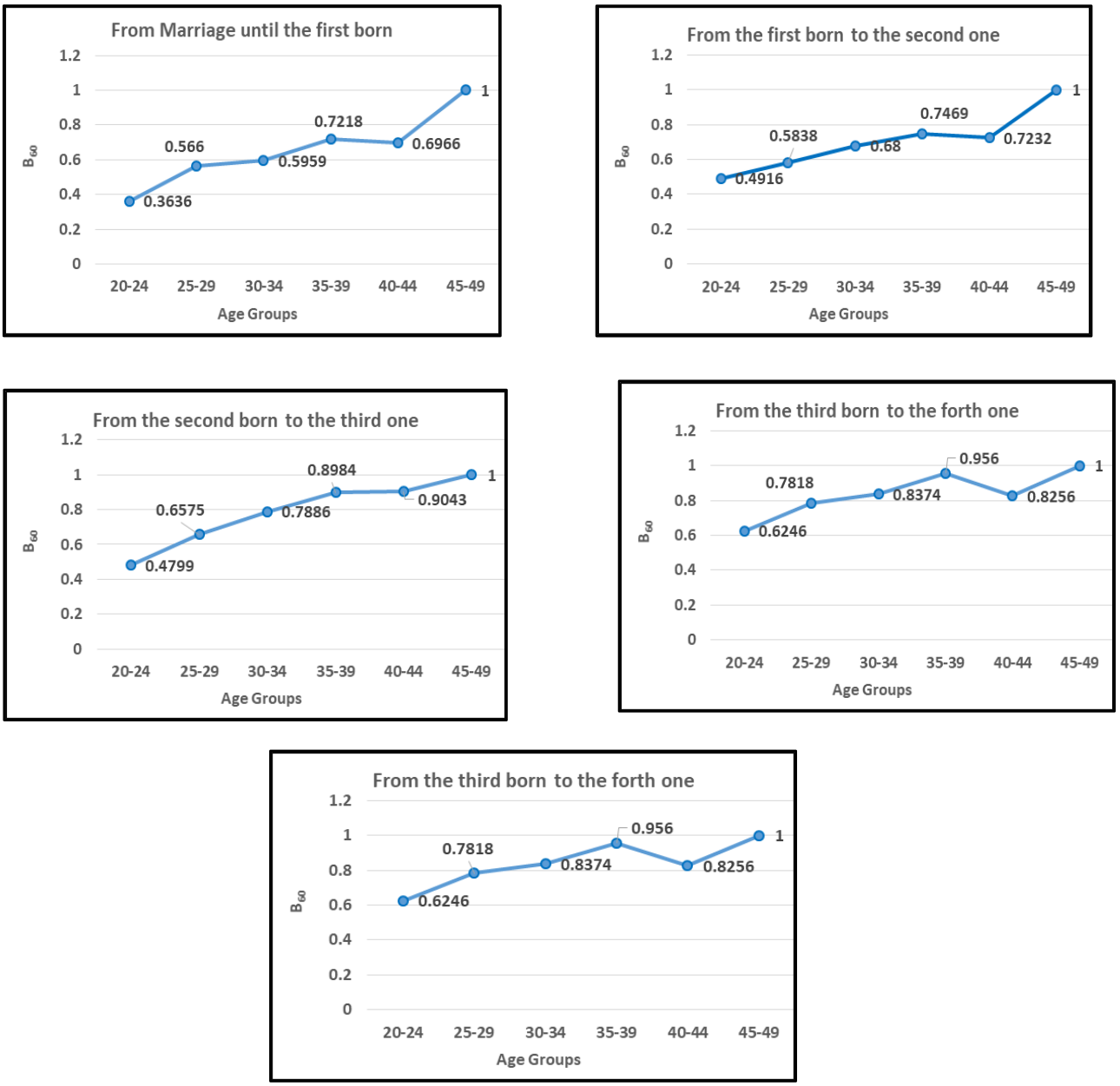

Fig.2: Trends of reproductive sequencing indicators (B_{60}) according to the rank of the child in the study sample.

In order to study the dimensions of both the variables and the determinants that have a meaningful effect and that are available in the DHS 2014 data to determine the effects of economic and social factors on the determinants of reproduction and their effect on the number of living births of the examined woman. To determine if there is any difference between them and the study's sample results and to draw a sample of the specific data of the Demographic and Health Survey. Path analysis was used to study and measure the direct and indirect impact of the determinants and was also used to know the relative importance of both the direct and indirect effects by developing a statistical model for the study data in comparison to the data of the health population survey 2014 shown in Figure (2). Where the variables, that were proven significant in the previous model and were available in the Demographic and Health Survey 2014, were used.

First, a group of variables were chosen. These variables represent the demographic, economic and social characteristics (SD), its variables referred to as (X's). The group of variables represent the reproduction determinants (DT) and they are referred to as (Z's). Moreover, there is a determinant concerned with the future intention and the mediator determinants and referred to as (FU), (V's). There is also the fertility determinant which is referred to as (FT), (Y's) and the details of the variables and determinants are as follows:

First, the economic and social determinants (SD):

X1 = The age of the woman.
X2 = The woman's educational status
X3 = The woman's practical situation.
X4 = The educational status of the current or last spouse.
X5 = The current practical status of the current or last spouse.
X6 = The governorate where the woman was born.
X7 = Family size.
X8 = Wealth index.

Second, Reproduction Determinants:

Z1 = Number of children when using the means for the first time.
Z2 = The appropriate number of children.
Z3 = Space between giving births.
Z4 = Woman's preference in having a boy or a girl.
Z5 = The intention to use family planning methods in the future.

Third, mediator determinants (FU):

V1 = Age when getting married.
V2 = Previous use of family planning methods.
V3 = Current use of family planning methods.
V4 = Number of months of breastfeeding the newborn.
V5 = Infants' death after delivery.

Forth, Fertility determinant (FT), (Y's):

V6 = Childbearing intention.
Y = Total births (CEB)

The analysis of the model's quality indicators of the compatibility has been carried out and by using a path analysis method, a model has been analyzed by comparing the results of the comparison of parameters of the two models in the slum and in the Republic areas in the Demographic and Health Survey 2014. There were some significant differences between the post effect of the demographic, socio-economic characteristics (SD) comparing to the effects after the reproduction determinants (DT) at a specific level below 0.05. In addition, there were some significant differences between the effect of reproduction determinants' dimension in comparison with the mediators (FU) especially when it comes to the intention to use, that happened at a level less than 0.05%. Meanwhile, there was no significant difference between the effect of the mediator determinant (FU) on the fertility factor (FT) in the sample of the study compared to the Demographic and Health Survey at a significant level of 0.10, while there were significant differences between the effect of reproduction determinants' dimension (DT) on the Fertility dimension (FT) at a significant level of 0,000 in the slums' data in the data of the survey.

By studying the factors and determinants, which emphasize and affect reproduction, we find that:

- Determinants have the deepest impact, whether a direct or an indirect one, on fertility; whenever they change per unit, this affects the fertility group by an increase of 1,031 units.
- The intention to use family planning methods has a direct effect in case of changing it by one unit leading to an increase in the fertility group (FT) by 0.052.
- The educational status for women is one of the factors which has an opposite effect on reproduction; the more educated she is, the less percentage of reproduction there is, reducing by 0.149.
- Family size is one of the affecting factors on the woman's opinion when it comes to deciding the appropriate number of children; whenever the size of the family change by one, their opinion deciding the appropriate number of children increase by 0.293, and also affects the use of family planning methods increased by 0,234.

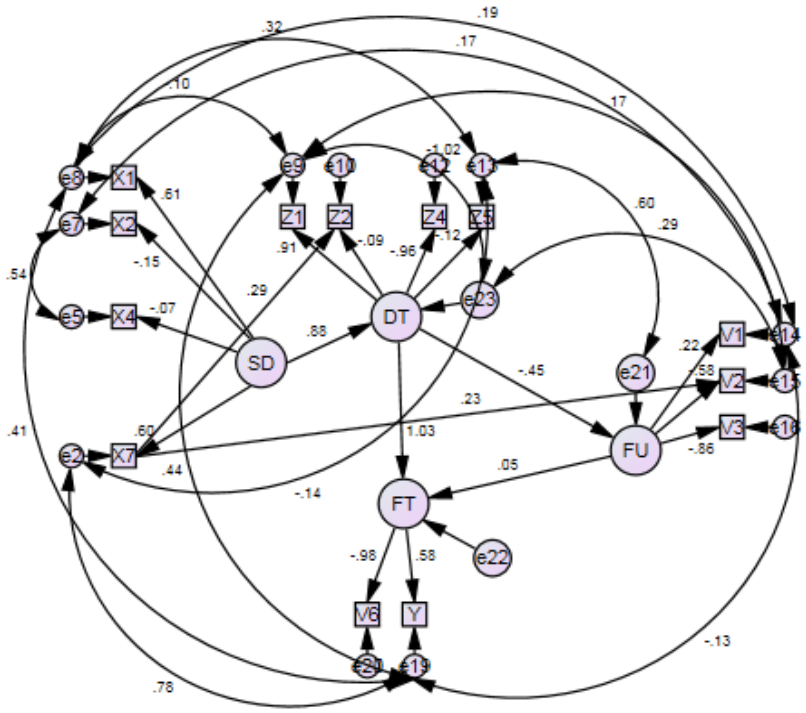

Fig.3: The proposed final model.

Table 2: Test the proposed model for slums.

Track	Estimate	Standard Estimate	Standard Error	Tests	Significance
SD ... > DT	0.03	1.03	0,005	5,502	0,000
DT -- > FU	- 1.218	- 0.357	0,517	- 2,357	0,018
SD -- > X7	0.215	0.62	0,019	11,275	0,000
FU -- > FT	- 0.626	- 0.221	0,264	- 2,374	0,018
DT -- > FT	9.51	0.983	1,746	5,446	0,000
SD -- > X4	- 0.06	- 0.149	0,019	- 3,118	0,002
SD -- > X2	- 0.127	- 0.32	0,022	- 5,783	0,000
SD -- > X1	1	0.583			
DT -- > Z2	1	0.328			

FU -- > V1	1	0.14			
FU -- >V2	- 0.588	- 0.768	0,253	- 2,326	0,020
FU -- > V3	- 0.723	- 0,732	0,289	- 2,499	0,012
FT -- > Y	1	0,736			
FT -- > V6	- 0.265	- 0,774	0,023	- 11,700	0,000
X7 -- > V2	0.054	0.249	0,012	4,460	0,000

Table 3: Quality indicators of compatibility of the model of comparison between the standard effect of the dimensions in the slums and the DHS survey 2014.

Total compatibility quality indicators	Value
Chi square	59,645
Degrees of Freedom	24
Level of significance	0.000
(CMIN/df)Indicator of standard Chi square	2.485
Compatibility Quality Index (GFI)	0.989
Adaptive Compatibility Quality Index (AGFI)	0.952
Comparative Compatibility Quality Index (CFI)	0.990
The square root of the average of rounding error squares (RMSER)	0.037

By calculating the direct and indirect effect of the variables, it has been shown that:

- There was a direct effect of the demographic and social characteristics' dimension (SD) on fertility (FT). Moreover, there was also an indirect effect through affecting the fertility determinants (DT) which affecting fertility directly and indirectly= 1.093.
- The direct effect of the determinants (DT) on fertility and its indirect effect by influencing the future intention to use family planning methods (FU) = 1,062.
- The future intention group for the use of family planning (FU) also had a direct effect on fertility (FT) = - 0.221
- The set of demographic and social variables (SD) affected the number of children born by the woman (Y) indirectly by affecting the fertility determinants (DT) = 0.805.
- There is no direct effect of the dimension of determinants of fertility (DT) on the number of children given by the woman (Y), but there was an indirect effect through the effect on fertility (FT) and by affecting the future intention of use (FU) then on the number of children born by this woman (Y) = 0.781.
- There is no direct effect of the future intention to use (FU) on the number of children given by the woman (Y), but there was an indirect effect through the effect on fertility (FT) and on the number of children born by the woman (Y) = - 0.163.
- The results showed that there is a direct effect of fertility (FT) on the number of children born by the woman (Y) = 0.736.

- By measuring the direct and indirect effect of the variables on the intention to conceive (V6), there was no direct effect of the dimension of demographic, social and economic characteristics (SD) or the group of determinants of fertility's dimension (DT) on intention to conceive (V6), while they had an indirect effect By affecting the determinants of fertility (DT) which affects fertility (FT) or the future intention to use family planning (FU) as the dimension of the demographic, socio-economic and socio-economic characteristics = -0.847 and the effect of fertility determinants' dimension on the future intention to conceive (V6) by influencing fertility (FT) or by affecting the future intention to use the methods (FU) = - 0.823.
- The future intention to use (FU) had an indirect effect on the future intention to conceive (V6) = 0.171 and Fertility (FT) had a direct effect on the number of children conceived by the woman (Y) = 0.774.

By examining the same group of variables and determinants that were proven to be significant in the previous model and that were available in the DHS 2014 to understand the effects of the socio-economic factors on the reproduction determinants and their effect on the number of living children conceived by the woman examined, and if there is a difference between them and the results the results of the study sample and draw a model for the data of the survey, to study and measure the direct and indirect effect of the determinants and to comprehend the relative importance of both the direct and indirect effects through developing of a statistical model for the study data compared to the data of the DHS Survey 2014 shown in Figure (4), the results showed the following:

- The demographic, social and economic characteristics' dimension have an impact on the number of births that conceived by a woman in the slums higher than the impact on the number of births that conceived by a woman at the level of the Republic.
- Mediator determinants and those concerned with the future intentions of the use of family planning methods or its current use are also considered to have an effect on the number of births conceived by the woman in the slums higher than the effect on the number of births conceived by the woman at the level of the Republic.
- The effect of determinants of fertility on the number of births conceived by the woman in the slums is higher than the effect on the number of births that were conceived by a woman at the level of the Republic.
- The effect of the mediator determinants and those concerned with the future intention in the use of family planning methods or its current use on the number of births conceived by a woman in the slums is higher than the effect on the number of births that were conceived by a woman at the level of the Republic.
- The demographic, social and economic characteristics' dimension has an impact on the intention to have a child in the slums higher than the impact on the intention to have a child at the level of the Republic.
- The determinants of reproduction's dimension has an effect on the intention to have a child in the slums higher than the effect on the intention to reproduce for women at the level of the Republic.
- The demographic, social and economic characteristics' dimension and determinants of reproduction's dimension have little effect on determinants of fertility in the slums, their effect on fertility determinants at the level of the republic.

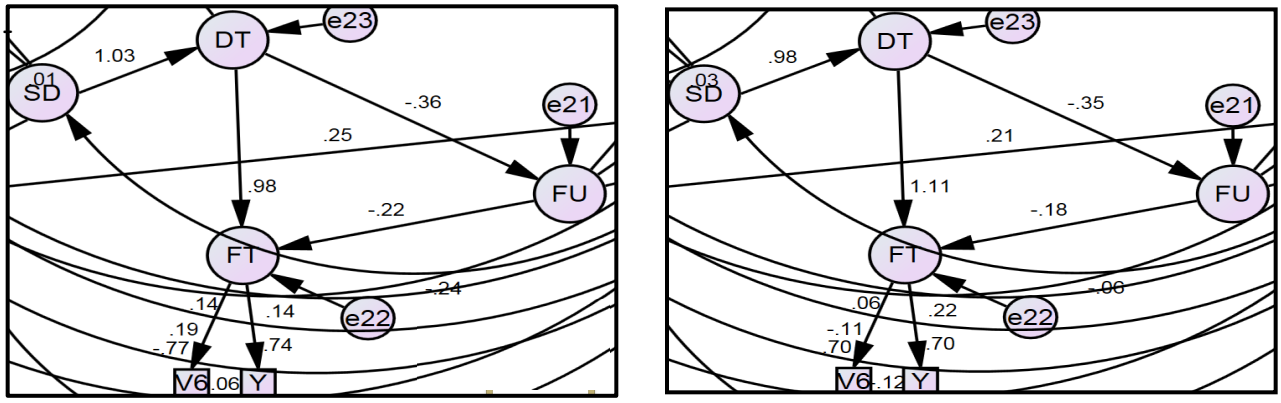

Fig.4: The final proposed model for the slums Health Population Survey Model 2014.

Table 4: Comparison between the standard effect of the dimensions in the slum area and the health population survey 2014.

Track	Slums	DHS 2014	Test's value	Significance
SD -- > DT	1.03	0.98	2.246	0.032
DT -- > FU	- 0.36	- 0.35	2.093	0.045
FU -- > FT	- 0.22	- 0.18	1.216	0.19
DT -- > FT	0.98	1.11	5.139	0

Source: That was calculated by the researcher from the outcomes of Amos program.

Table 5: The direct, indirect and total effect of the dimensions and determinants on fertility of both the study data and the DHS 2014 data and the difference between them.

	The study			DHS 2014			Difference		
Dimension	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**
SD --> Y	0.805	0	0.805	0.802	0	0.802	0.003	0	0.003
DT -- > Y	0.782	0	0.782	0.818	0	0.818	-0.036	0	-0.036
FU -- > Y	-0.163	0	-0.163	-0.125	0	-0.125	-0.038	0	-0.038
FT -- > Y	0.736	0.736	0	0.699	0.699	0	0.037	0.037	0
SD -- > FT	1.094	0	1.094	1.147	0	1.147	-0.053	0	-0.053
DT -- > FT	1.062	0.983	0.079	1.171	1.108	0.063	-0.109	-0.125	0.016
FU --> FT	-0.221	-0.221	0	-0.178	-0.178	0	-0.043	0.043	0
SD -- > V6	-0.846	0	-0.846	0.798	0	0.798	-1.644	0	-1.644
DT -- > V6	-0.822	0	-0.822	0.815	0	0.815	-1.637	0	-1.637
FU -- > V6	0.171	0	0.171	-0.124	0	-0.124	0.295	0	0.295
FT -- > V6	-0.774	-0.774	0	0.696	0.696	0	-1.47	-1.47	0

The previous studies dealt with the issue of slums on one side while others dealt with the topic of fertility alone. There was not enough coverage of the phenomenon of slums and their relationship or impact on the fertility of their dwellers of women, both at the local and international levels, and the conclusion of some studies:

El-Zanaty, 2003 [7] has highlighted in her studies the patterns of change, over time, of the main indicators of fertility preferences in Egypt. She also examined the evolution in a number of fertility preference indicators, including: (i) the ideal size of the family; (ii) was there a plan for the final birth. Future reproductive intentions. The study showed that Egypt was one of the countries of the developing countries that has a gender preference throughout finding indications of male preference. The study also revealed that there is a continuation of the indicator of male preference in having childbirth among Egyptian women. If so, the preferred groups of having males instead of females are very noticeable. The study pointed to the role played by male preference in shaping the intentions and reproductive behavior of Egyptian couples.

Makhlouf and Halim, 2003 [8] studied the phenomenon of slums in Egypt in terms of its origin, development, geographical distribution and the reasons that led to the growth of slum phenomenon. The study attributed the causes of its emergence to two groups of reasons. The first group is the social, economic and demographic reasons and the second group is administrative and legal reasons. The study also showed that the social, economic and demographic characteristics of the population of slums were low, in addition to the high rates of illiteracy, unemployment, fertility rates and low-income levels.

In Al Batal's study, 2005 [9] it has been shown that the relationship between some environmental variables and reproductive behavior in random areas and the study of Al-Moneeb area in Giza governorate. The results of the study confirmed that Al-Moneeb area has a special nature that is unplanned and without permits and is inhabited by middle- and upper-middle income residents. The region suffers from the existence of environmental problems in the region such as the narrowness of the streets and the lack of light and problems related to cleanliness and dumping of garbage in waste and space. The region also suffers from a lack of cultural, recreational and transport services, shortages in social and educational services for middle, secondary and technical schools, and the lack of health services despite the urban center, but there is a severe shortage of sanitation facilities. The practice rate is high because the area's residents are newly married.

The majority of wives and couples support FGM and the absence of officials and the role of popular organizations in raising awareness about the population problem. The study called for the establishment of a school complex to serve the region, the lighting main and side streets, the implementation of network operations for the extension of water and sewage lines, the creation of a market for the region and the increase in literacy classes.

Faraj, etal., 2008 [10] studied fertility trends in Egypt by analyzing the fertility trends during the time domain of the study and identifying both the size of the demand for fertility and its trends, and the specific factors of the demand for reproduction and the determinants of the demand for family planning. The study was based on data provided by the DHS series conducted in Egypt from 1998 to 2005. The study found that the rate of change in the total fertility rate was not the same in all regions of Egypt, where the rate of change in urban governorates decreased and the decline was seen in a rural tribal area, reflecting the fact that fertility levels in their early stages are rapidly changing. The study recommended the development of a strategy that includes looking at the governorates of Upper Egypt as a special case and the need to focus on the issue of communication between the wife and husband. Which leads to more understanding on the couple's positive goals and the improvement of educational levels especially for women and improving their status and participation in the workforce.

Abdel-Jawad, 2013 [11] identified the role played by slums' population characteristics in affecting population growth, exacerbating the face of the population problem in the current circumstances. And the study concluded that the governorate of Cairo has a large percentage of slums, with low characteristics such as the lack the lowest health standards, the high proportion of young age groups, especially the age group (20), the spread of illiteracy among the population in both regions, the low educational levels and the high unemployment rates. In addition, in these slums, there is the prevalence of cultural patterns like early marriage, marriage of relatives and the desire to have a male child. The study highlighted the importance of the development studies of the state to plan the development of these areas to be suitable for living, encouraging voluntary initiatives to change the cultural awareness of the population of these areas. Directing some investments to help these areas to create areas of work and attention to improve the infrastructure and attention to health awareness of the family.

Khedr, 2013 [12] analyzed the effect of birth space on fertility in Iraq in 2011. She also analyzed the level, pattern and trends of fertility and its recent changes and analyzed the effect of the social, economic and demographic factors on them and the reproductive behavior of women. Finally, she concluded that women tend to get less children when they get older, especially from the third child and upward. Women who experience the loss of an infant avoid using family planning methods in order to have an alternative infant. Finally, the study concluded that that the many various factors have different effects on the spacing between the last two births. To illustrate, women who get married at a later age, their childbearing period may be a short one; consequently, they try to fasten the process of giving birth to a sufficient number of babies leading to shorter period of time for women who are late in marriage.

We may find that most of the previous studies went off from one main variable which is poverty, while other studies focused on the nature of the social groups inside these slums; mainly women and babies because they considered the most affected groups by conditions of physical and environmental poverty. It can be confirmed that most of these studies contributed by one way or another in drawing a picture of life in slums, its social relationships, and its cultural patterns. Some of these studies were concerned with slums' determinants and how they affect the population problem, but they did not elaborate on the relationship between the spread of slums and fertility rates and reproduction trends in these slums and that will be discussed in this study.

In this study we concluded that, an advanced statistical analysis was done, side to side with, examining the variables of fertility by using life tables. The study also used the same approach used by Rodriguez and Hobcraft (1980) [6] to measure the values of B60 which represent the percentage of women who achieved a higher level by conceiving another born child through five years (i.e. 60 months) after conceiving the previous child. Moreover, path analysis was used to examine and

measure the direct and indirect effect of the determinants and to highlight their relative importance and to develop a statistical model for the study data in comparison with DHS 2014.

Moreover, we have reached a set of results. The most important of which were that there were significant differences between the demographic, socio-economic characteristics' dimension (SD) of the population in the slums over the determinants of reproduction (DT) at a level less than 0.05. Also, there were significant differences between the effect of the dimension of fertility determinants (DT) and mediator determinants (FU) especially those of the intention in use at a level below 0.05. However, there were no significant differences between the effect the mediator determinants' dimension (FU) over the fertility (FT) in the study sample compared to the DHS 2014 at a significant level of 0.10, while there were significant differences between the effect of the determinants of reproduction's dimension (DT) over the fertility (FT) at a significant level of 0,000 in the data of the study of slums in the data of DHS survey.

It is recommended that the crucial importance of full and comprehensive indicators of slums. To illustrate, a national survey on slums in the Arab Republic of Egypt should be conducted in all its categories to measure knowledge and attitudes towards reproductive health and reproduction to explore the shortcomings in order to develop a comprehensive strategy for slum awareness programs. Since education has an effect on fertility, educational services should be expanded and in the meantime girls should be encouraged to enroll in education, especially in the younger age groups. The State directs investment in slums to improve the characteristics of the population, affecting their economic level and their future trends in reproduction. Expanding of health services (family planning services - maternal and child health care) that contribute to fertility reduction. Increase programs for community awareness in these areas to change their culture concerning some issues. Surveys on reproduction, family planning, or reproductive health should include areas representing the slums to clarify the deficiencies that needed to be covered.

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