

ARE BRAZILIAN WOMEN HAVING FEWER CHILDREN THAN THEY DESIRE? A COMPARISON BETWEEN 1996 AND 2006

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ABSTRACT

Brazil has experienced a very sharp decline in fertility in the last 50 years. The TFR was 6.4 in 1960 and 1.8 in 2010. Given this context, are women having fewer children than they desire? If so, what are the factors associated with the gap between desired and actual number of children? Using data from PNDS 1996 and 2006 (DHS-type) and multinomial logistic models, the answer to the first question is yes: In 2006, compared to 1996, the chance of having fewer children than desired was 1.2 the chance of having the same number of children desired. Regarding the second question, having more years of schooling and a husband whose number of desired children was smaller than the wife's increased the odds of having fewer children than desired. Rural/urban residence, labor force participation, religion, SES, race, and who decides how to spend the wife's earnings do not seem to matter.

INTRODUCTION

In the Brazilian context, according to the IBGE Census, the TFR was 6.3 children per woman in 1960, rising to 4.4 in 1980, 2.4 in 2000, below the replacement level in 2004 to reach 1.77 children per woman in 2013 (IBGE, 2011, 2013). For the next years, projections indicate reductions in fertility, but at a lower rate. The level of the expected slowdown, if it comes, is a source of comprehensive academic debate in the beginning of the second decade of this century, since, as the lower the fertility rate, the greater the distances between fecundity and declared that ideal by individuals (Cavenaghi & Alves, 2011; Rios-Neto, 2012).

Many researchers have sought to understand these rapid changes in reproductive behavior of women with a continuous decline in fertility. In demographic studies, many theories have been created to explain the decline in fertility giving multiple paths to justify its reduction. However, decision making in relation to the number of children is an extremely complex process, and according to Morgan & Taylor (2006) to understand the contemporary low fertility, it is necessary to understand the reasons that lead people to realize or not their fertility intentions.

In this context, become important studies that consider the psychological motivations and decisions to the individual's behavior. That is, the key to understanding the behavior of fertility is the analysis of the desires and intentions for children and not necessarily fertility itself. Thus, we highlight the importance of studies of reproductive preferences.

Although most people in low fertility countries report that they would like to have two or three children fertility remains below replacement level, indicating an incapacity to achieve desired fertility (Bongaarts, 2001; Wong, 2009). This gap between actual and desired fertility is defined by Philipov et al. (2009, p 71.) As "unmet need for children", resulting from biological, economic and social constraints to have children (Philipov, et al, 2009; Liefbroer, 2009).

This discrepancy between intentions and realized fertility is due mainly to changes in the timing of fertility, namely, the postponement of motherhood to more advanced ages and competition with other activities in modern society, where couples have preferences and / or simultaneous priorities. How often people can not meet all these desires at the same time (some being mutually exclusive), they end their reproductive period with fewer children than they replied in surveys as the ideal number who would like to have (Demeny, 2003).

It is becoming more common, also in the Latin American context, the emergence of women who want to have more children than they actually have (Wong, 2009). In Brazil it has been no different, given that the average ideal number of children declared to all Brazilian women 15-49 years was 2.1 children and fertility observed was 1.8 children (Berquo & Lima, 2008), what would be a significant proportion of couples with fewer children than they actually have and that would probably be unable to implement their reproductive preferences.

To intensify the knowledge about this phenomenon, this work aims check whether women married / cohabiting between 35-49 years in Brazil have fewer children than they want, identifying possible associations between sociodemographic characteristics and the occurrence of this phenomenon comparing the changes between 1996 and 2006.

METODOLOGY

We used data from the National Survey of Demography and Health of Women and Children ((DHS-type) in 1996 and 2006, which created from the variables of interest, ie, status of implementation of reproductive preferences. This variable was calculated by subtracting the number of children surviving and the number of desired children if the result was zero the woman was classified as no discrepancy if the result was positive women show an excess of children and it was negative women was classified with a discrepancy of fertility (had fewer children than she declared ideal). From this variable described the profile women currently married or cohabiting, and who were between 35 to 49 years who were in the condition of discrepancy fertility.

The variables used in this analysis included: geographic region, type of household, years of schooling, age, race / color, economic status, religion, age to have their first child, parity, use of contraception, paid work, number of joints index gender, decision as money she earns from her husband and the desire for children.

Later these same variables were analyzed jointly in a multinomial logistic regression model to identify possible relationships between having fewer children than desired and sociodemographic characteristics. In the first model we worked with the discrepancy in general, ie, have the same number of children they want to have more or less. In the second model focused on those women who had fewer children than the declared ideal and knowing that this discrepancy happens quite different between those women without children, women who have a way with two children, we tried to identify possible differences the sociodemographic variables and gender for each level of discrepancy, namely, according to the parity of the woman. In both models women without discrepancy were used as the reference category for the statistical analysis.

OUTCOMES

In order to reveal the relationships between sociodemographic variables and changes in the status of implementation of reproductive preferences between 1996 and 2006 has the TAB. 1, where the year variable was statistically significant, namely, women in 2006 were 1.2 times greater chance of having fewer children than desired when compared to women in 1996. On the other hand, these were 34% less likely of being overweight as children than women in 1996. Again, these findings demonstrate the change in the pattern of fertility discrepancy and preferences in Brazil, indicating the increase the fertility deficit. The geographic regions shown to be important in determining the fertility discrepancy in the North and Northeast regions appeared to have more chances of having women with excess children than the Southeast. Already the South showed up with 40% less chance of having women with excess children compared to Southeast. These findings corroborate the expected dynamics for these regions, where the North and Northeast still have a deficiency in care planning in fertility, leading to unwanted births. In contrast, for cultural reasons and opportunity cost of women, the South and the Southeast the phenomenon of women having fewer children than the ideal declared shown more frequent, leading to greater competition and consequently activities to higher levels of discrepancy fertility.

It is observed that age, seems to have some influence on women with excess children, where women aged 40-44 are less likely to have as much discrepancy as excess children when compared with the group of women aged 35 to 39 years. The schooling also was related to the levels of discrepancy, in that increased education increases the chances of women having fewer children than desired, especially the group 8-10 years of education compared with those women with 0 to 3 years study. And, conversely, the higher the chance was less educated women were overweight as children. This result confirms the findings of Hakkert (2003), which studied the fertility deficit in eight Latin American countries for women aged 40-49 years and found that those more educated were more chance of having fewer children than desired. The desire of the husband seems to be important to determine the discrepancy fertility because women whose husbands wanted fewer children than them had increased by two times the odds of having fewer children than ideal when compared to women declared that husbands want the same number of children than them. The effect of the husband's desire for those with excess children seems to occur for both sides, given that both women where the husband wanted more as those where husbands want less presented more likely to be with more children than desired.

The model also indicated that the number of marriages and gender index proved to be related to the situation of excess children, in that women who experienced more than one union had increased their chances of having more children than they wanted. This finding may be related to the fact that remarriages stimulate new births, which was not within the expectations of women. The increase in the gender index has increased by 14% the chances of women having more children than desired. The same does not seem to effect women with discrepancy. The household situation, did not affect the satisfaction of fertility, as well as paid work, religion, economic strata, race / color and decision about the money women earn. And the analysis showed no collinearity with any variable and withdrawing those variables that were not significant in the Wald test was performed to Likelihood test to try to find the best model, comparing the full model (saturated) with the smallest model (reduced). The test showed a significance of 0.038, indicating that

despite apparently variables were not statistically significant; the model was saturated preferable to reduced model.

Table 1 - Model 1: Multinomial logistic regression (Reference - Women without discrepancy) to explain the implementation of the fertility preference among married women between 35-49 years, Brazil 1996 (n = 1629) and 2006 (n = 982)

Independent variables	have less children			have more children			VIF	Test Wald	have less children			have more children			VIF	Test Wald
	Coef.	Odds	P> z	Coef.	Odds	P> z			Coef.	Odds	P> z	Coef.	Odds	P> z		
Geographic region																
1996																
Southest																
North	0,39	1,389	0,397	-0,184	0,832	0,529	1,540									
Northeast	0,37	1,452	0,152	0,263	1,301	0,249	2,180	0,002								
South	0,053	1,054	0,822	-0,565	0,568	0,015	1,740									
Midwest	0,536	1,710	0,023	-0,289	0,749	0,193	1,820									
2006																
Southest																
North	-0,225	0,798	0,615	-0,783	0,457	0,195	1,420									
Northeast	-0,400	0,671	0,345	0,215	1,239	0,689	1,420	0,284								
South	-0,179	0,836	0,580	-0,629	0,533	0,124	1,720									
Midwest	-0,686	0,504	0,124	-1,087	0,337	0,044	1,390									
Household situation																
Urban																
Rural	0,350	1,419	0,200	-0,167	0,846	0,445	1,220	0,272								
Age groups																
35 - 39																
40 - 44	-0,226	0,798	0,237	-0,465	0,628	0,005	1,210	0,003								
45 - 49	0,183	1,201	0,395	-0,627	0,534	0,004	1,230									
Years of study																
0 - 3																
4 - 7	0,037	1,038	0,886	0,478	1,614	0,017	1,630	0,002								
8 - 10	0,259	1,295	0,345	-0,222	0,801	0,391	1,330									
11	-0,331	0,719	0,204	-0,844	0,430	0,001	1,820									
12 and more	-0,161	0,851	0,628	-0,508	0,602	0,150	2,150									
Race/color																
others																
whithe	-0,365	0,694	0,030	0,087	1,091	0,604	1,250	0,048								
Religion																
Catholic																
Protestant	-0,573	0,564	0,310	0,310	1,364	0,559	1,030	0,719								
Pentecostal	-0,326	0,722	0,158	-0,304	0,738	0,199	1,070									
Whitout religion	0,093	1,097	0,861	0,296	1,344	0,570	1,030									
Others	0,242	1,274	0,551	0,144	1,155	0,687	1,060									
Employment																
yes																
no	-0,713	0,490	0,045	-0,378	0,685	0,198	-0,224	0,163								
Economics trata																
C																
A - B	0,025	1,025	0,915	-0,028	0,972	0,915	1,990	0,526								
D - E	0,247	1,280	0,273	-0,150	0,860	0,445	1,920									
Desire of husband																
desire the same																
desire more	0,059	1,061	0,771	0,734	2,083	0,000	1,100	0,000								
desire less	1,429	4,175	0,000	0,626	1,869	0,007	1,110									
Unions number																
first																
more unions	-0,227	0,797	0,394	-0,843	0,431	0,000	1,280	0,000								
Gender Index																
Gender Index	0,399	1,490	0,002	0,108	1,114	0,367	2,250	0,127								
Decision with the money that she receive																
She decide																
Husband decide	0,691	1,995	0,038	-0,440	0,644	0,199	1,280	0,237								
Decide together	0,084	1,088	0,714	-0,440	1,002	0,991	1,650									

Source: Multinomial Logit e Logistic models prepared by author with the data from DHS of 1996 e 2006.

The second model, in which we attempted to identify differences between the levels of discrepancy and sociodemographic characteristics, we note that again the differences between periods were statistically significant independent of parity, where women with two or more children in 2006 were 55% less likely to have lower fertility than desired when compared to women of 1996. Moreover the chances of being mismatched and not have children and have only one increased to 2.1 times and 1.4 times respectively, compared with women 1996.

Table 2 - Model 1: Multinomial logistic regression (Reference - Women without discrepancy) to explain the implementation of the fertility preference among married women between 35-49 years, Brazil 1996 (n = 1629) and 2006 (n = 982)

Independent variables	Have less children and parity zero			Have less children and parity one			Have less children and parity two or more			VIF	Test Wald
	Coef.	Odds	P> z	Coef.	Odds	P> z	Coef.	Odds	P> z		
Year of the DHS											
1996											
2006	1,191	3,290	0,017	0,898	2,454	0,011	-0,780	0,458	0,022	2,850	0,000
Geographic region											
Southeast											
Nort	-0,193	0,824	0,769	-0,508	0,602	0,296	0,168	1,183	0,665	1,400	0,322
Northeast	0,040	1,041	0,926	-0,425	0,654	0,260	0,356	1,427	0,186	1,710	
South	0,116	1,123	0,798	0,003	1,003	0,993	-0,061	0,941	0,825	1,790	
Midwest	-0,402	0,669	0,415	-0,315	0,730	0,384	0,516	1,675	0,035	1,600	
Household situation											
Urban											
Rural	0,260	1,297	0,536	0,028	1,029	0,931	0,101	1,106	0,743	1,220	0,930
Age groups											
35 - 39											
40 - 44	-1,254	0,285	0,001	-0,404	0,668	0,132	-0,325	0,723	0,115	1,200	0,024
45 a 49	0,064	1,066	0,856	-0,102	0,903	0,743	-0,044	0,957	0,850	1,210	
Years of study											
0 a 3											
4 a 7	-1,116	0,327	0,053	-0,196	0,822	0,576	-0,069	0,934	0,810	1,470	0,030
8 a 10	0,314	1,368	0,507	0,012	1,012	0,975	0,437	1,548	0,119	1,370	
11	0,506	1,659	0,277	0,096	1,101	0,794	-0,293	0,746	0,318	1,730	
12 and more	1,703	5,488	0,008	0,269	1,308	0,599	-0,093	0,911	0,815	1,940	
Race/ color											
others											
whithe	-0,158	0,854	0,627	-0,552	0,576	0,021	-0,217	0,805	0,246	1,280	0,121
Religion											
Catholic											
Protestant	-0,364	0,695	0,729	-0,307	0,736	0,747	-0,495	0,610	0,525	1,080	0,188
Pentecostal	0,656	1,927	0,117	-0,566	0,568	0,103	-0,518	0,596	0,051	1,090	
Without religion	1,282	3,605	0,060	0,562	1,754	0,428	0,049	1,051	0,928	1,040	
Others	-0,453	0,636	0,703	0,718	2,051	0,154	0,108	1,114	0,797	1,070	
Employment											
yes											
no	-0,373	0,688	0,485	0,078	1,081	0,877	-0,895	0,409	0,010	1,290	0,065
Economics strata											
C						Ref					
A e B	-0,564	0,569	0,283	0,053	1,054	0,883	-0,042	0,958	0,880	1,570	0,339
D e E	0,660	1,934	0,089	0,438	1,549	0,196	-0,105	0,901	0,660	1,590	
Desire of husband											
desire the same											
desire more	-0,248	0,780	0,571	0,265	1,304	0,349	0,030	1,031	0,899	1,050	0,000
desire less	0,629	1,876	0,151	1,069	2,913	0,001	1,369	3,930	0,000	1,060	
Number of unions											
first											
more unions	-0,484	0,617	0,382	-0,358	0,699	0,375	0,270	1,310	0,367	1,200	0,444
Gender Index	-0,001	0,999	0,998	0,218	1,244	0,282	0,403	1,496	0,006	3,410	0,045
Decision with the money that she receive											
She decide											
Husband decide	0,165	1,179	0,787	0,951	2,589	0,051	0,508	1,663	0,150	1,210	0,331
Decide together	-0,404	0,668	0,389	0,069	1,072	0,832	0,075	1,078	0,778	1,500	

Source: Logit e Logistic models prepared by author with the data from DHS of 1996 e 2006

The geographic region was only important for women with discrepancy and had two or more children, where women in the Midwest were more likely to be in this situation than women in the Southeast. Already of the age and education were significant only for women without children, those with 40-44 years had lower odds of being in this situation

when compared to women 35-59 years. Those women who had higher education or more were 4.4 times more likely to be unmet by the lack of children than those with 0-3 years of study. Race / color influences the group of women with discrepancy and had one child, in which white women had lower odds of being in this situation with regard to women of other races / color.

Pentecostal women with more than one births presented less likely to have fewer children than desired in relation to Catholic women. Those women have no religion had 2.6 times greater chance of be discrepant fertility and not having children when compared with Catholic. The model also showed that women who were not employed were 59% less likely to be discrepant fertility and having two or more children compared to women who worked. Regarding the economic strata, it is observed that women in the economic strata D and E were 93% more likely to be mismatched and not having children than women of stratum C. As shown in previous models, the desire of the husband to have fewer children than the wife increased the chances of women having fewer children than desired for those with one and two and more children. Index Gender was significant for women with discrepancy and had two or more children, where the increase in the index was 1 49% increase in the chances of them being in this situation. Finally, the decision variable on the money she earns, showed that when the husband decides, the woman who has a child had 1.5 times more likely to have fewer children than their desired compared to those in which she herself decided about what to do with the money she received.

CONCLUSIONS

Given the low levels of fertility achieved by Brazil in recent decades and the future trend still a consistent decrease, it becomes increasingly important to understand this context the analysis of reproductive preferences as well as the implementation of these by people. In order to advance this topic, this article aims to answer two questions: are women having fewer children than they desire? If so, what are the factors associated with the gap between desired and actual number of children? From the multinomial logistic models, the answer to the first question is yes: In 2006, compared to 1996, the chance of having fewer children than desired was 1.2 the chance of having the same number of children desired. Furthermore, it can be concluded that, in the past, there was a positive discrepancy where children born was greater than desired fertility. The gap between these measures remained, but contrary to what he had before form. Recently there has been a statistically significant increase in the number of women who complete their reproductive period having fewer children than desired, so that the discrepancy is negative. These results express that reproductive preferences as well as their implementation, have changed considerably in the country. Although still a subject little explored by researchers, it can be assumed that there is a growing contingent of women with fewer children than desired, higher than that of women who exceeded their ideal fertility number.

In parallel with this context, it is necessary to consider the specifics of this phenomenon. The lower fertility than the desired decrease according to the parity of women, since, to have children, the chances of achieving the ideal number will increase. The highest percentage of women with fewer children than they desire is made up of those with desires to parity third and fourth order. However, as a result of falling fertility and expansion of the group with up to two children, the percentage of women that increased their

discrepancy due to have fewer children than ideal during the decade studied were those with no children or only one, due to the expansion of this group.

The first major finding is that many variables, such as geographic region, type of household, income status, religion, race / color, among others, which in 1996 had a major role in defining the women who had fewer children than desired profile lost its importance in the characterization of this group in 2006. This in some way indicates that the discrepant fertility is generalizing and is no longer restricted to a certain group of women. However, some variables seem to have a strong effect in determining the fertility discrepancy, since this situation is directly related to the age at which women become mothers, and the higher the age, the greater the chance of them not crystallizing number of children idealized. The schooling also seems to contribute, since the higher the education, the greater the percentage of women with fewer children than desired - especially those with 12 or more years of study in which this percentage reaches 48%. The behavior of these two variables suggest that, in the relatively near future, this phenomenon tends to be more frequent, since the extent that the schooling of women is increasing, there is a tendency to postpone the age for having a first child, besides a continuous growth of the schooling of women.

One can also conclude that, apparently, decision making by children being more "shared" between partners, given that men's desire for children proved to be very related to the implementation of fertility preferences of women, so that those who had spouses who wanted fewer children than they had much higher chances to have a discrepancy in fertility when compared with those who had husbands who idealized the same number of children they. This signals that do not always both spouses are satisfied with the results of the behavior of the couple's fertility and among the various negotiation processes, a spouse can make your wish become reality to the detriment of the wishes of the other. Apparently, in this case, that at the end gain advantage men.

Furthermore, it can be said that the process of decision making by children involves many ambiguities because unusually it was found that a considerable percentage of women who were classified as having fewer children than desired were using contraception at the same time, respondents did not want more children. On the one hand, these findings suggest that, despite the desire for children, there is the action of other mediators of reproductive behavior, that eventually play a more important role in its decision that the realization of women's desire. Such mediators need to be identified and evaluated in order to develop actions for ensuring the implementation of reproductive preferences of women.

All this only confirms the complexity of the decision-making process for children and emphasize the importance of understanding the phenomenon of discrepancy fertility as well as the difficulty of its measurement. Among many problems, these estimates may present an inconsistency of terms (discrepancy / dissatisfaction) which consequently influence the measurement of the problem inside the field of reproductive rights and public policy agenda. Another possible bias is the fact that in the same way previously the effect of rationalization hinder its capture of excess fertility, many women currently in their responses about their wishes and intentions for children could not assume their real desires by not have children because they would not be prepared to go against the remaining norm, which is to have children. In other words, this issue proves challenging since there is still much to move forward to better understand this phenomenon, especially in developing contexts.

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