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Census Surveys

The Bureau of the Census made its first inquiry into the childbearing experience of single (never-married) women in the decennial census of 1970 [1]. In both the 15-percent and the 5-percent samples all women 14 years old and over (with exceptions noted below) were subjects for the question "How many babies has she ever had, not counting stillbirths." In previous censuses where a similar question was asked, the question applied only to women who had ever been married.

The second venture, by way of a "pretest," was the June 1975 marital and fertility history supplement to the Current Population Survey (CPS) [2]. Single women 18 to 75 years old were asked about children already born, if the women were in that portion of the sample that was not to be interviewed again as part of the CPS. The experimental subsample included 832 women, about one-eighth of the entire sample of single women.

Finally, in June 1976, the question concerning the number of children born to date was extended to <u>all</u> single women 18 to 59 years old who fell into the Current Population Survey [3]. Detailed tabulations from the 1976 survey are expected to be published early in 1977.

In the 1970 census, about 60 percent of the population was enumerated by a mail-out/mailback procedure. Both 100 percent forms and sample forms were distributed by mail in advance of census day [4]. The forms were to be filled out by a responsible member of the household and returned by mail to a data collection center. In these self-enumeration situations, if all sample items were fully reported, the number of children ever born would be reported for all single women 14 years old and over in the household.

Forty percent of the population was enumerated in 1970 by the conventional procedure of direct interviewing. Forms containing the 100 percent items were delivered by mail, with instructions to fill them out and wait for a census enumerator who would call to collect them. Enumerators also brought with them sample schedules to be filled out in selected households at the time of the visit [5]. In these direct interview situations, the enumerator's instructions stated that the question about children ever born was not to be asked regarding a single woman unless that woman had one or more children living in the household with her [6].

Response rates for single women in the 1970 census are shown in tables 1 and 2. About 70 percent of all single women had a report for number of children ever born, with somewhat lower rates of response occurring among women 30 years old or over and especially among those 45 years old or over. Table 1 indicates that the overall rate of response was about the same among Blacks and Whites: 71.8 percent for Blacks and 70.4 percent for Whites. Table 2 shows that, despite interviewer instructions to the contrary (which were stated in an unemphasized manner in the middle of a big instruction

Table 1.--Response Rates for Single Women to Questions on Children Ever Born: 1970 Census

	All ra	ces	White	;	Black		
Age of woman	Single wom e n	Percent reporting	Single women	Percent reporting	Single women	Percent reporting	
Total	15,604,425	70.6	13,328,860	70.4	2,051,428	71.8	
15 to 17 years	5,553,582	70.4	4,753,084	70.7	729,471	68.7	
18 and 19 years	2,804,666	74.0	2,410,507	74.1	354,934	74.1	
20 and 21 years	1,763,105	74.7	1,504,522	74•5	228,016	76.4	
22 to 24 years	1,267,771	73.7	1,053,724	73•1	188,379	77.3	
25 to 29 years	827,906	71.5	646,466	70.5	161,636	76.0	
30 to 34 years	435,897	68.3	338,370	67.3	88,101	73.0	
35 to 44 years	672,255	67.1	546 , 154	66.1	114,850	71.8	
+5 years and over	2,279,243	62.9	2,076,033	62.9	186,041	63.9	

Source: U.S. Bureau of the Census, <u>1970 Census of</u> <u>Population</u>, Subject Report PC(2)-3A, "Women by Number of Children Ever Born," table A-2.

Table 2.—Percent of Single Women Reporting on Number of Children Ever Born, by Type of Enumeration Area and Whether Own Children Are Present: 1970 Census

Presence of children and	Mail out, enumerati	/mail back ion areas	Conventional enumeration areas				
residence	White	Black	White	Black			
NO OWN CHILDREN PRESENT							
Number of women	8,613,333	1,174,607	4,563,274	591,464			
Percent reporting	71.1	68.5	68.8	68.8			
WITH OWN CHILDREN PRESENT							
Number of women	98,209	202,203	54 , 044	83,154			
Percent reporting	83.4	91.7	79.0	91.9			

(Based on 5-percent sample)

Source: Unpublished records from the 1970 census

book), responses were obtained from a very large percentage of single women in the conventional enumeration areas. In fact, response rates were about the same both in mail-back and in conventional areas.

Table 3 presents rates of NONresponse (to emphasize differences) to the question on children ever born from the experimental portion of the June 1975 CPS and from the entire sample of single women in the June 1976 CPS. In the QPS, unlike the 1970 census, all data are collected in a direct interview situation. although the interview may take place by telephone and information about childbearing to date may be reported by the woman in question or by some knowledgeable person in the household. Rates of nonresponse were unexpectedly low at 9.9 percent overall in 1975 and 7.7 percent in 1976. These rates compare quite favorably with the corresponding nonresponse rates for evermarried women in the same surveys, 7.8 and 6.8 respectively. No consistent patterns of nonresponse for 1975 and 1976 clearly emerge when the data are classified by age, education, and region of residence. Overall, in both surveys, responses about previous childbearing were slightly harder to obtain for White single women than for Black single women, although the 1976 difference is marginal.

There is also available some evidence of a nonnumerical character regarding public tolerance for a question on past fertility of single women. During the 1975 survey, official observers of field interviews were asked to be alert to reactions to the material in the June supplement. While some of the interviewers and other Census Bureau field personnel seemed to be nervous about the prospect of asking single women questions about their past fertility, no observer reported any resistance from the persons interviewed. Moreover, to the best of the author's knowledge, neither the Census Bureau nor any other govenmental body has received any complaints from the public about the fact that single women were included in the survey concerning children born to date.

Reliability of Fertility Data for Single Women

At present there are very few ways to check on the overall reliability of census data on the fertility of single women. The Census Bureau has no experience prior to 1970 on which to base a comparison. A content reinterview study after the 1970 census did follow up on fertility reports for ever-married women, but no attempt was made to do the same for single women. Moreover, the only sure guarantee of a content reinterview is consistency, not accuracy. Other national fertility surveys have been limited to married women. Data on illegitimacy published in Vital Statistics are not strictly comparable to census data on premarital fertility. Hence, the census data permit only limited validation. Some attempts at this follow.

Table 4 shows mean numbers of children ever born to single women, as tabulated from the 1970 census. Rates for White women are substantially lower than those for Black women. Averages increase with age until a peak is reached for women in their thirties (who would have been in their highly fertile years during the "baby boom"); then the rates taper off with increasing age. The substantial difference by race is supported by information available from birth registrations [7]. The variation in fertility patterns by age parallels that among evermarried women.

Table 5 compares the results of reconstructing annual numbers of births from the 1970 census with births reported in Vital Statistics. Since the registration of births is estimated to be over 99 percent complete for the years shown in table 5 [8.], the number of total births

Table 3.	Nonresponse Rates for Single Women to the Item on Children Ever Born in the June
	1975 and June 1976 Current Population Surveys

	All rac	es	Wihi	.te	Black			
Subject	Number of women (thousands)	Percent not re- porting-	Number of women (thousands)	Percent not re- porting ¹	Number of women (thousands)	Percent not re- porting-		
June 1975 ^{2/}								
Total	• 1,348	9•9	1,115	10.5	214	7•5		
Age of woman								
18 and 19 years 20 to 24 years 25 to 29 years 30 years and over	 393 478 135 340 	11.7 6.9 11.9 10.9	331 377 11 2 294	11.5 7.4 14.3 11.9	56 88 24 47	(B) 6.8 (B) (B)		
Years of school completed								
0 to 11 years	 303 525 339 180 	9.6 10.3 9.4 10.0	223 429 302 160	9•4 11•7 9•9 9•4	75 93 29 17	10.7 4.3 (B) (B)		
Region								
Northeast	• 400 • 355 • 368 • 224	12.5 9.6 10.1 5.4	338 316 264 196	13.0 10.1 11.0 6.1	62 39 99 14	(B) (B) 8•1 (B)		
June 1976								
Total	• 10,694	7•7	8,646	7•9	1,824	7.0		
Age of woman	•		·		·			
18 and 19 years 20 to 24 years 25 to 29 years 30 to 59 years	 3,286 4,186 1,351 1,871 	8.6 7.0 6.3 8.8	2,742 3,385 1,030 1,489	8.2 7.5 6.5 9.3	494 702 280 348	11•1 5•0 5•3 6•9		
Years of school completed								
0 to 11 years	 2,015 4,409 2,783 1,486 	7•7 8•1 7•3 7•3	1,345 3,555 2,403 1,344	9•3 8•1 7•2 7•5	635 781 306 102	4•2 8•6 8•7 7•7		
Region								
Northeast	 2,883 2,830 3,012 1,969 	8.6 8.2 5.7 8.9	2,461 2,415 2,091 1,679	8.5 8.2 6.3 8.6	387 389 905 143	10•4 7•3 4•3 14•4		

B, Base less than 75,000.

¹/ The term nonresponse rates shown in this table are based on single women in households where interviews were conducted. Interviews were not obtained from 4.7 percent of the occupied sample households in the June 1976 survey. Of the occupied sample households in which interviews were not obtained, slightly over half of the noninterviews (2.5 percent of all occupied households) were due to refusals to cooperate with any part of the Current Population Survey.

 $\frac{2}{D}$ Data limited to experimental portion of the sample.

Source: Forthcoming Bureau of the Census reports on the June 1975 and June 1976 Current Population Surveys.

recorded by Vital Statistics may be taken as the benchmark against which to judge other estimates.

Regarding total births to women of all races. including both legitimate and illegitimate births, the 1970 census consistently exceeds the Vital Statistics estimates for the years 1965 to 1969 by up to 3 percent. This suggests some small bias in the Census Bureau's reconstruction of the fertility histories of women. The number of births based on the reconstructed fertility histories of the 1970 census depends on the number of women counted in 1970. Since mortality will have made some small inroads on the number of women who were alive in each of the years from 1965 to 1969. one would expect census estimates to fall short of estimates based on vital registrations. Sampling variability, both in the census estimates and in those from Vital Statistics, could account for some of the relatively small differences in numbers of total births, but it is unlikely to account for the fact that the census numbers consistently differ from vital registration numbers in the direction opposite from that expected.

The number of <u>first</u> births estimated by the census for 1969 exceeds that from Vital Statistics by about 3 percent; otherwise census numbers fall short of Vital Statistics by up to 3 percent. Differences between the 1970 Census and Vital Statistics are somewhat more pronounced when racial differences are taken into account.

When the comparison between the 1970 Census and Vital Statistics concerns "illegitimate" first births, the basis for comparison is less clear. The only type of illegitimacy that can be inferred from census data is that which occurs prior to the first marriage of the child's mother, whereas Vital Statistics data include all reported instances of births out-of-wedlock, regardless of the mother's marital status at the time. In addition, census data include reports from women in all States of the union, but not all States report to the Office of Vital Statistics on the legitimacy status of births. In 1965, 16 States did not make such reports; by 1969, the number of nonreporting States had been reduced to 11. However, data reported by Vital Statistics do include estimates of the

Table 4	Children	Ever	Born	Per	1.000	Single Women:	1970	Census
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Subject	All races	White	Black	
15 to 17 years old: Women Children per 1,000 women	5,553,582 23	4 , 753,084 10	729 , 471 105	
18 and 19 years old: Women Children per 1,000 women	2,804,666 67	2,410,507 32	354 , 934 302	
20 and 21 years old: Women Children per 1,000 women	1,763,105 117	1,504,522 53	228,016 531	
22 to 24 years old: Women Children per 1,000 women	1,267,771 217	1,053,724 110	188,379 813	
25 to 29 years old: Women Children per 1,000 women	827 , 906 428	646,466 208	161,636 1,306	
30 to 34 years old: Women Children per 1,000 women	435 , 897 595	338,370 263	88,101 1,871	
35 to 39 years old: Women Children per 1,000 women	337 , 144 593	267,297 271	63,510 1,939	
40 to 44 years old: Women Children per 1,000 women	335,111 460	278,857 236	51,340 1,659	
45 to 49 years old: Women Children per 1,000 women	334, 549 352	289 , 137 203	40,708 1,379	
50 years old and over: Women Children per 1,000 women	1,944,694 224	1,786,896 157	145,333 1,008	

Source: U.S. Bureau of the Census, <u>1970 Census of Population</u>, Subject Report PC(2)-3A, table 65.

number of illegitimate births which occur in the nonreporting States [9]. If the Vital Statistics estimates can be accepted as a reasonably accurate estimate of illegitimate first births in the United States [10], then the 1970 census method of reconstructing fertility histories overestimates the number of illegitimate first births occurring in 1969 by about 13 percent and underestimates them by about the same amount for 1967 and 1968. The census overestimate for 1969 is all the more suspect, given the fact that census data do not include illegitimate first births occurring to women after the date of their first marriage. Thus, it appears that the 1970 census provided the basis for a reasonably accurate reconstruction of total births for each of the years from 1965 to 1969, but was less effective in terms of estimating the numbers of premarital births. To what extent deficiencies are due to the relatively greater sampling variability among the smaller numbers associated with illegitimacy, to deliberate misreporting of pertinent information on the census schedule, and to the Census Bureau's procedures for imputing values for missing information is something which, in practical terms, is undeterminable.

In another attempt to assess the validity of data collected by the Census Bureau, I have compared in table 6 the distributions and mean numbers of children ever born from the 1970 census with those from the June 1976 CPS. Among the percentages childless for the several age/ race groupings, some differences are statistically significant; on the other hand, the percentages childless bear a marked similarity for the two different surveys. Even for average numbers of children ever born (shown in the last column), the similarities between the two surveys are quite strong, with the exception of the women 25 to 29 years old. Although there is no necessity for population paramaters of this sort to remain the same over a period of 6 years, such statistics generally do change slowly and the inner consistency of the census data provides some basis for confidence in the quality of the data.

Summary

In the course of this paper I have reported on the experience of the Census Bureau in an area of inquiry that is still in its infancy, at least as regards <u>national</u> level fertility

Table 5.--1970 Census and Vital Statistics Estimates of Annual Total Births, First Births, and Illegitimate First Births, 1965 to 1969.

Disc and more	Total (thous	births ands)	First (thous	births ands)	Illegitimate first births (thousands)			
nace and year	1970	Vital	1970	Vital	1970	Vital		
	Census	Statistics	Census	Stati <i>s</i> tics	Census <u>1</u> /	Statistics		
All Races								
1969	3,700	3,600	1,392	1,353	253	223		
1968	3,540	3,502	1,280	1,311	191	213		
1967	3,526	3,521	1,223	1,228	166	189		
1966	3,606	3,606	1,192	1,224	147	NA		
1965	3,848	3,760	1,154	1,160	141	NA		
White						_		
1969	3,066	2,994	1,147	1,144	123	115		
1968	2,943	2,912	1,064	1,104	90	113		
1967	2,941	2,923	1,025	1,037	79	99		
1966	3,017	2,993	1,012	1,043	77	NA		
1965	3,194	3,124	978	988	73	NA		
Black								
1969	567	543	217	199	120	1042/		
1968	535	531	191	187	94	100 2 /		
1967	526	544	177	174	83	90-		
1966	528	558	160	165	66	NA		
1965	590	581	159	155	64	NA		

1/ Restricted to first births calculated as occurring before first marriage.

2/ Data refer to races "other than White."

NA Not available

Source: U.S. Bureau of the Census, <u>1970 Census of Population</u>, Subject Report PC(2)-3B, "Childspacing and Current Fertility," tables 66 and 68; National Center for Health Statistics, <u>Vital Statistics of the United States</u>, Vol. I, for the stated years. surveys. I have tried to support the position that inquiring into the previous childbearing experience of single women will not result in unacceptably high rates of nonresponse, at least when the questioning is limited to numbers and birthdates of children. Nevertheless, there are some good reasons for suspecting that the

quality of Census data on <u>premarital</u> fertility is not quite as good as that on fertility <u>after</u> <u>first marriage</u> [11]. As more experience is gained in conducting fertility surveys among single women, we should come into a position to make better evaluations of the quality of the data.

Table ó	Children	Ever	Born	to	Single	Women	18 to	29	Years Old	as	Reported	in	the	1970	Census
	and the	June 🛾	1976 (Curi	rent Pop	pulatio	on Sur	vey	•		-				

		Census		June 1976 Current Population Survey						
Age and race	Percent by number of children ever born				Children	Percen childr	Children			
	Total	0	1	2 or more	ever born per 1,000 women	Total	0	1	2 or more	per 1,000 women
18 To 24 Years Old										
All races	100.0	92.6	7	•4	115	100.0	91.0	6.3	2.7	126
White	100.0	96.6	2.4	1.0	58	100.0	96.2	3.0	0.8	48
Black	100.0	68.8	19•5	11.7	494	100.0	64.7	23.1	12.2	518
ALL RACES										
18 and 19 yrs. old	100.0	95.0	5	•0	67	100.0	94.2	4.8	1.0	69
20 and 21 yrs. old	100.0	91•9	5•7	2.4	117	100.0	91.0	6.0	3.0	129
22 to 24 yrs. old	100.0	88.1	7.1	4.8	217	100.0	85.6	9•3	5.2	220
25 to 29 yrs. old	100.0	81.1	8.7	10.2	428	100.0	80.9	9.8	9•3	358

Source: U.S. Bureau of the Census, <u>1970</u> <u>Census of Population</u>, Subject Report PC(2)-3A, table 65; forthcoming Bureau of the Census report on the June 1976 Current Population Survey.

FOOTNOTES

- See U.S. Bureau of the Census, <u>1970 Census of</u> <u>Population</u>, Subject Reports PC(2)-3A, "Women by number of Children Ever Born," and PC(2)-3B, "Childspacing and Current Fertility."
- U.S. Bureau of the Census, <u>Current Popula-</u> <u>tion Reports.</u> Series P-20, "Fertility of American Women: June 1975" (forthcoming).
- 3. U.S. Bureau of the Census, <u>Current Popula-</u> <u>tion Reports</u>, Series P-20, "Prospects for American Fertility: June 1976" (forthcoming).
- 4. U.S. Bureau of the Census, <u>1970 Census of</u> <u>Population and Housing</u>, PHC(R)-1, "Procedural History," pp. 1-6.
- 5. <u>Ibid</u>., pp. 1-7.
- 6. U.S. Bureau of the Census, "Questionnaire Reference Book, Census '70," p. 41.
- National Center for Health Statistics, <u>Vital</u> <u>Statistics of the United States</u> 1971, Vol. 1-Natality, table 1-30.
- <u>Ibid</u>., table 1-19. For a discussion of the completeness of birth registrations, see <u>ibid</u>., p. 4-13.
- 9. <u>Ibid.</u>, pp. 4-10 and 4-11. For a discussion of the problems associated with the NCHS estimates of illegitimate births for non-

reporting States, see Beth Berkov and June Sklar, "Metholological Options in Measuring Illegitimacy and the Difference They Make," <u>Social Biology</u>, Vol. 22, No. 4 (1975), pp. 356-71.

- 10. For comments regarding the quality of illegitimacy statistics derived from birth registrations, <u>ibid</u>,; National Center for Health Statistics, Vital and Health Statistics, Series 21, No. 15, "Trends in Illegitimacy: United States-1940-1965," p. 1-2; and Phillips Cutright, "Illegitimacy in the United States: 1920-1968," in Commission on Population Growth and the American Future, <u>Demographic and Social</u> <u>Aspects of Population Growth</u>, Charles F. Westoff and Robert Parke, Jr., eds., Vol. 1 of Commission Research Reports (Washington: U.S. Government Printing Office, 1972), pp. 429-38.
- 11. For a discussion of the quality of census fertility data collected from ever-married women in the June 1965 Current Population Survey, see Monroe G. Sirken and George Sabagh, "Evaluation of Birth Statistics Derived Retrospectively From Fertility Histories Reported in a National Population Survey: United States, 1945-64," <u>Demography</u>, Vol. 5, No. 1 (1968), pp. 485-503.