

**THE SURVEY OF INCOME AND  
PROGRAM PARTICIPATION**

**Analyzing the Characteristics of Blacks:  
A Comparison of Data from SIPP and  
CPS**

No. 81

Reynolds Farley and Lisa J. Neidert  
Population Studies Center  
University of Michigan

April 1989

U.S. Department of Commerce U.S. CENSUS BUREAU

# Survey of Income and Program Participation

Analyzing The Characteristics Of Blacks:  
A Comparison Of Data From SIPP And CPS

8904 81

Reynolds Farley and Lisa J. Neidert  
Population Studies Center  
University of Michigan

SIPP Working Paper #81

April 1989

Presented at the 1988 meetings of the American Statistical Association, Social Statistics Section; New Orleans, Louisiana; August 22, 1988. The views expressed are the authors' and do not necessarily reflect those of the Census Bureau.

## TABLE OF CONTENTS

<b>SECTION ONE:</b>	Introduction.....	1
<b>SECTION TWO:</b>	Using SIPP Data to Study Blacks- Sample Size Considerations.....	2
Table 1.	Counts of Observations from March, 1985 CPS and Contemporaneous SIPP, for Persons Classified by Race, Sex, Region and Age.....	3
Table 2.	Counts of Observations from March, 1985 CPS and Contemporaneous SIPP for Persons Classified by Race, Sex, Educational Attainment and Age.....	5
Table 3.	Counts of Observations from March, 1985 CPS and Contemporaneous SIPP for Persons Classified by Race, Sex, Employment Status and Age.....	6
Table 4.	Counts of Observations from March, 1985 CPS and Contemporaneous SIPP for Persons Classified by Race, Sex, Marital Status and Age.....	8
<b>SECTION THREE:</b>	A Comparison of Marital Status, Educational Attainment and Labor Force Status.....	9
Table 5.	Marital Status by Race, Age and Sex; from March, 1985 CPS and Contemporaneous SIPP.....	10
Figure A.	Estimated Years Spent in Each of Five Marital Statuses as Individuals Age from 15 to 64, March, 1985 Current Population Survey and Corresponding Data from SIPP.....	12
Educational Attainment.....		13
Table 6.	Educational Attainment by Race, Age and Sex; from March, 1985 CPS and Contemporaneous SIPP.....	14
Labor Force Status.....		15
Table 7.	Labor Force Status by Race, Age and Sex; from March, 1985 CPS and Contemporaneous SIPP.....	16

Figure B.	Estimated Years Spent in Each of Three Labor Force Statuses as Individuals Age from 15 to 64, March, 1985 Current Population Survey and Corresponding Data from SIPP.....	17
<b>SECTION FOUR:</b>	<b>The Determinants of Unemployment and Earnings: A Further Comparison of SIPP and CPS.....</b>	<b>18</b>
Table 8.	Analysis of Determinants of Unemploy- ment in March, 1985: A Comparison of SIPP and the March, 1985 CPS.....	19
Figure C.	Estimates of Unemployment Rates for Selected Groups; Data from March, 1985 CPS and Contemporaneous SIPP.....	21
Table 9.	Regression of Monthly Earnings on Predictor Variables; Comparison of Results from March, 1985 CPS and Contemporaneous SIPP for Persons 25 to 64.....	22
<b>Conclusion.....</b>		<b>23</b>
Figure D.	Estimates of Monthly Earnings for Selected Groups; Data from March, 1985 CPS and Contemporaneous SIPP.....	24

**BIBLIOGRAPHY**

## ANALYZING THE CHARACTERISTICS OF BLACKS: A COMPARISON OF DATA FROM SIPP AND CPS

### SECTION ONE: Introduction

Although data from the Survey of Income and Program Participation (SIPP) provide extensive information about the characteristics of blacks, we have yet to determine whether the sample size permits a detailed analysis of racial differences, or whether the characteristics of the black population, as estimated from SIPP, correspond to those same characteristics as measured in other demographic surveys. To explore these issues, we studied data from the fifth and sixth waves of the 1984 panel of SIPP, and compared them to data gathered in the March, 1985 Current Population Survey (CPS); that is, the Annual Demographic File. We selected those rotation groups from the two waves of SIPP which were interviewed during March of 1985, while the interviewing for the Current Population Survey was done primarily during the first week of March. This report compares SIPP and CPS data. (For information about the design of SIPP, see David, 1985).

The first section provides information about the sample size for blacks from one wave of SIPP. This will allow potential users to know whether the sample is sufficiently large to permit the testing of hypotheses about racial differences. Using unweighted data, this report presents sample counts for blacks and whites classified by age, sex and region of residence in March, 1985.

Many users of SIPP data will likely be interested in the marital status, labor force status and educational attainment of adults. To provide additional information about the sample sizes for the population classified by these characteristics, persons age 15 and over were categorized by race and sex into four age groups. For each group, we present information about the sample size for five marital status, three labor force and five broad educational attainment categories. For comparative purposes, we show similar sample counts from the March, 1985 CPS. Although unweighted counts are used in this section, we realize that most investigators will analyze

weighted data, or will attach adjusted weights to each observation so that the weighted sample counts are equal in size to the actual sample sizes, a procedure which may lead to more nearly appropriate tests of statistical significance.

The second aim of this report is to determine whether the characteristics of blacks and whites, as reported in SIPP, correspond to those reported in CPS. We focus upon three important variables: marital status, educational attainment and labor force status. In this section, weighted data will be analyzed.

The final component of this comparison of SIPP and CPS data seeks to determine whether demographic and socio-economic relationships are similar in the three different sources. Two types of relationships are explored. First, a model was fit which took the log-odds of unemployment for labor force participants as its dependent variable. Independent variables were age, educational attainment, marital status and region. These models used the weighted sample data and were fitted separately for four race-sex groups, but were restricted to respondents age 25 to 64 in March, 1985.

Second, using the same groups and a similar age range, a model was fit which related a logged function of monthly earnings - for those who reported earnings - to educational attainment, age, region and place of residence. A major difference between the two data sources is that SIPP reported earnings for a one-month period at the beginning of 1985, while CPS reported an individual's earnings for the entire year of 1984.

## **SECTION TWO: Using SIPP Data to Study Blacks - Sample Size Considerations**

What is the sample size of blacks available from one panel of SIPP? In March, 1985, when the sample size in SIPP included approximately 18,000 household, information was obtained from a total of 5,156 blacks and 37,686 whites. These numbers are shown in Table 1, along with a classification by age, sex and region.

[Table 1]

There are two ways to consider the sample size for blacks in SIPP. From one perspective, the number of observations is quite large, much larger, for example, than the sample size for

TABLE 1. Counts of Observations from March, 1985 CPS and Contemporaneous SIPP, for Persons Classified by Race, Sex, Region and Age

	CPS						SIPP													
	Total USA		Northeast		Midwest		South		West		Total USA		Northeast		Midwest		South		West	
- BLACK MALES -																				
TOTAL	2,309	419	496	1,225	169	7,308	1,327	1,306	3,996	679										
0-14	769	118	165	434	52	2,329	416	424	1,271	218										
15-24	478	97	97	252	32	1,390	269	251	729	141										
25-34	338	57	65	184	32	1,097	164	189	611	133										
35-44	213	52	41	103	17	795	158	116	440	81										
45-54	177	44	47	74	12	610	130	115	309	56										
55-64	157	31	40	75	11	525	97	111	290	27										
65-84	167	19	39	96	13	526	89	94	321	22										
85+	10	1	2	7	0	36	4	6	25	1										
- BLACK FEMALES -																				
TOTAL	2,847	537	578	1,516	216	9,034	1,702	1,624	4,980	728										
0-14	788	131	171	422	64	2,416	426	457	1,320	213										
15-24	496	94	111	254	37	1,596	298	266	899	133										
25-34	507	95	93	285	34	1,524	290	274	819	141										
35-44	307	68	68	142	29	1,100	234	204	578	84										
45-54	256	65	53	124	14	808	186	149	407	66										
55-64	209	40	39	113	17	669	110	130	380	49										
65-84	267	40	43	163	21	834	149	131	515	39										
85+	17	4	0	13	0	87	9	13	62	3										
- WHITE MALES -																				
TOTAL	18,107	3,943	4,748	5,859	3,557	67,591	14,900	17,225	18,588	16,878										
0-14	4,047	853	1,056	1,308	830	16,138	3,218	4,271	4,250	4,399										
15-24	3,180	693	890	977	620	10,911	2,489	2,908	2,926	2,688										
25-34	3,024	638	798	980	608	11,725	2,396	2,878	3,219	3,132										
35-44	2,439	533	614	817	475	9,287	2,117	2,276	2,497	2,397										
45-54	1,840	406	482	601	351	6,476	1,506	1,548	1,948	1,474										
55-64	1,703	385	452	564	302	6,356	1,571	1,619	1,788	1,378										
65-84	1,774	415	430	575	354	6,293	1,483	1,620	1,855	1,335										
85+	100	20	26	37	17	405	120	105	105	75										
- WHITE FEMALES -																				
TOTAL	19,579	4,280	5,166	6,360	3,773	71,909	16,673	17,907	19,867	17,462										
0-14	4,067	849	1,067	1,301	850	15,025	3,115	3,775	3,936	4,199										
15-24	3,166	624	922	1,005	615	11,272	2,623	2,856	3,066	2,727										
25-34	3,210	713	824	1,022	651	12,145	2,702	3,031	3,229	3,183										
35-44	2,535	557	650	820	508	9,656	2,280	2,332	2,670	2,374										
45-54	1,965	440	525	660	340	7,018	1,660	1,677	2,079	1,602										
55-64	1,963	468	499	650	346	7,070	1,785	1,768	2,017	1,500										
65-84	2,433	552	623	841	417	8,898	2,280	2,245	2,641	1,732										
85+	240	77	56	61	46	825	228	223	229	145										

SOURCE: U.S. Bureau of the Census, Current Population Survey, Annual Demographic Survey, March, 1985; Survey of Income and Program Participation, Panel 1 (Tape Files).



blacks included in the General Social Science Survey conducted at the National Opinion Research Center, the National Longitudinal Survey, or the Panel Study of Income Dynamics and the National Election Studies conducted by the Institute for Social Research. From the other perspective, the sample size in SIPP is small compared to the CPS which, in March of 1985, included 16,342 blacks. In brief, the actual sample size in CPS was about 3.3 times that of SIPP.

Table 1 shows the classification of sample respondents by age, sex and region. For purposes of fitting models of earnings or unemployment for broad age groups, there are sufficient observations for blacks in these cross-sectional data. For example, about 1,400 black men aged 15 to 64 were asked the array of questions about earnings, labor force participation and income in the March, 1985 SIPP. However, if there is a need to analyze specific delineated age groups or those living in one region, the sample size will be thin. The sample in SIPP of blacks aged 65 and over was less than 500, and in the West - the region with the smallest black population - data were secured from fewer than 400 black respondents.

[Table 2]

Table 2 presents counts from the March, 1985 CPS and the comparable waves of SIPP for the population age 15 and over, classified by race, sex, educational attainment and age. There is evidence that SIPP provides a sufficient number of cases to permit analyses of how educational attainment related to other social, demographic and economic variables since the sample size includes about 3000 blacks over age 14. On the other hand, standard errors might become relatively large if the analysis were restricted to specific educational attainment groups of blacks. There were, for instance, only 127 black male college graduates and 171 females interviewed in SIPP.

[Table 3]

An analysis of labor force status is shown in Table 3. For purposes of this comparison, rather than focusing upon activity in a specific week, we used the coded SIPP data which summarized labor force activity in the month before the interview. Persons who reported that they worked one or more weeks during the month were classified as employed. Those who did

TABLE 2. Counts of Observations from March, 1985 CPS and Contemporaneous SIPP for Persons Classified by Race, Sex, Educational Attainment and Age

Educational Attainment	SIPP						CPS			
	Total	15-24	25-44	45-64	65+	Total	15-24	25-44	45-64	65+
- BLACK MEN -										
TOTAL	1,540	478	551	334	177	4,979	1,390	1,892	610	1,087
≤11 Years	720	269	124	184	143	2,273	769	441	289	774
12 Years	461	124	224	95	18	1,558	421	769	181	187
13-15 Years	232	77	113	33	9	722	179	402	80	61
16 Years	68	7	51	7	3	260	17	172	34	37
≥17 Years	59	1	39	15	4	166	4	108	26	28
- BLACK WOMEN -										
TOTAL	2,059	496	814	465	284	6,618	1,596	2,624	808	1,590
≤11 Years	910	246	187	249	228	2,751	730	616	322	1,083
12 Years	676	153	351	138	34	2,262	522	1,122	299	319
13-15 Years	302	82	174	40	6	1,013	299	521	100	93
16 Years	108	13	69	15	11	377	35	238	43	61
≥17 Years	63	2	33	23	5	215	10	127	44	34
- WHITE MEN -										
TOTAL	14,060	3,180	5,463	3,543	1,874	51,453	10,911	21,012	6,476	13,054
≤11 Years	4,245	1,439	803	1,040	963	14,930	5,032	2,865	1,489	5,544
12 Years	4,621	980	1,907	1,241	493	17,629	3,312	7,752	2,506	4,059
13-15 Years	2,488	595	1,221	492	180	8,865	2,047	4,437	951	1,430
16 Years	1,373	121	781	353	118	5,541	436	3,299	731	1,075
≥17 Years	1,333	45	751	417	120	4,488	84	2,659	799	946
- WHITE WOMEN -										
TOTAL	15,512	3,166	5,745	3,928	2,673	56,884	11,272	21,801	7,018	16,793
≤11 Years	4,618	1,273	830	1,161	1,354	16,456	4,810	3,065	1,605	6,976
12 Years	6,007	1,048	2,450	1,729	780	22,846	3,651	9,378	3,399	6,418
13-15 Years	2,686	636	1,202	565	283	9,668	2,207	4,540	1,021	1,900
16 Years	1,324	182	722	280	140	5,103	535	2,999	603	966
≥17 Years	877	27	541	193	116	2,811	69	1,819	390	533

SOURCE: See Table 1.

TABLE 3. Counts of Observations from March, 1985 CPS and Contemporaneous SIPP for Persons Classified by Race, Sex, Employment Status and Age

Employment Status	SIPP						CPS								
	Total	15-24	25-44	45-64	65+	Total	15-24	25-44	45-64	65+	Total	15-24	25-44	45-64	65+
- BLACK MEN -															
TOTAL	1,540	478	551	334	177	4,979	1,390	1,892	1,135	562					
At Work	819	191	397	206	25	2,502	385	1,355	696	66					
Unemployed	160	80	62	16	2	365	129	170	65	1					
Not in Labor Force	561	207	92	112	150	2,112	876	367	374	495					
- BLACK WOMEN -															
TOTAL	2,059	496	814	465	284	6,618	1,596	2,624	1,477	921					
At Work	891	154	488	227	22	2,735	392	1,549	731	63					
Unemployed	165	71	78	16	0	248	77	132	36	3					
Not in Labor Force	1,003	271	248	222	262	3,635	1,127	943	710	855					
- WHITE MEN -															
TOTAL	14,060	3,180	5,463	3,543	1,874	51,453	10,911	21,012	12,832	6,698					
At Work	9,165	1,797	4,575	2,503	290	32,332	4,519	17,716	9,257	840					
Unemployed	564	243	227	89	5	2,237	485	1,135	570	44					
Not in Labor Force	4,331	1,140	661	951	1,579	16,884	5,907	2,161	3,002	5,814					
- WHITE WOMEN -															
TOTAL	15,512	3,166	5,745	3,928	2,673	56,884	11,272	21,801	14,088	9,723					
At Work	7,232	1,571	3,595	1,874	192	23,913	4,041	12,884	6,448	540					
Unemployed	462	198	192	64	8	1,136	244	583	284	26					
Not in Labor Force	7,818	1,397	1,958	1,990	2,473	31,835	6,987	8,335	7,356	9,157					

SOURCE: See Table 1.

not work during the month, and spent one or more weeks looking for work or on layoff, were classified as unemployed. The "not in labor force" category includes persons who did not work during the month, and did not seek employment. Note that a person who sought a job for several weeks, and then got one is classified as employed. The CPS data are also a mixture of monthly and weekly data. Employed persons are those who worked during the week before the interview. Unemployed persons did not work in the week prior to the interview, were able to accept employment and made some efforts to find work during the preceding month. There is a slight difference between the SIPP and CPS classifications. A person who worked for three weeks before the interview, and then spent a week on layoff, would be classified as employed by our definition with SIPP data, but unemployed with the CPS data.

The sample size for blacks in SIPP will sustain a study of labor force participation, employment or the rate of unemployment. However, a specific cross-sectional study of black unemployment will involve a small sample size. A total of only 325 blacks were classified as unemployed in March, 1985 by SIPP.

In this section, we are analyzing unweighted data, so it is inappropriate to estimate rates of unemployment or labor force participation from the numbers in Table 3. However, the actual counts of the unemployed are quite high in SIPP relative to CPS. That is, given the difference in the number of households sampled, we might expect the sample counts in SIPP to be about one-third those of CPS. For both black and white women, the sample number of unemployed was relatively large in SIPP compared to CPS.

[Table 4]

The final table in this section classifies SIPP and CPS respondents by age, race, sex and marital status as of March, 1985. Again, we observe that the sample size for blacks is sufficient for many investigations, although there are few male black widowers and, for most purposes, it will probably be necessary or desirable to pool the married-spouse-absent, the divorced and the separated populations since the numbers in these specific marital statuses are few.

TABLE 4. Counts of Observations from March, 1985 CPS and Contemporaneous SIPP for Persons Classified by Race, Sex, Marital Status and Age

Marital Status	SIPP						Total	CPS					
	15-24	25-44	45-64	65+	15-24	25-44		45-64	65+				
<b>- BLACK MEN -</b>													
TOTAL	1,540	478	551	334	177	4,979	1,390	1,892	610	1,087			
Married, Spouse Present	655	29	293	224	109	2,142	81	989	399	673			
Married, Spouse Absent	11	1	6	3	1	59	7	31	11	10			
Widowed	57	1	1	16	39	188	0	8	12	168			
Divorced/Separated	180	4	80	74	22	598	11	293	125	169			
Never Married	637	443	171	17	6	1,992	1,291	571	63	67			
<b>- BLACK WOMEN -</b>													
TOTAL	2,059	496	814	465	284	6,618	1,596	2,624	808	1,590			
Married, Spouse Present	635	42	312	209	72	2,084	147	1,038	358	541			
Married, Spouse Absent	19	4	9	4	2	63	10	24	18	11			
Widowed	264	0	20	81	163	936	3	69	122	742			
Divorced/Separated	407	13	132	128	34	1,179	51	674	234	220			
Never Married	734	437	241	43	13	2,356	1,385	819	76	76			
<b>- WHITE MEN -</b>													
TOTAL	14,060	3,180	5,463	3,543	1,874	51,453	10,911	21,012	6,476	13,054			
Married, Spouse Present	8,822	430	3,917	3,033	1,442	32,469	1,402	15,005	5,460	10,602			
Married, Spouse Absent	56	4	17	18	17	363	62	166	50	85			
Widowed	318	0	19	59	240	1,146	2	35	67	1,042			
Divorced/Separated	1,018	42	591	297	89	3,484	142	2,063	597	682			
Never Married	3,846	2,705	919	136	86	13,991	9,303	3,743	302	643			
<b>- WHITE WOMEN -</b>													
TOTAL	15,512	3,166	5,745	3,928	2,673	56,884	11,272	21,801	7,018	16,793			
Married, Spouse Present	8,816	769	4,091	2,887	1,069	32,407	2,594	15,664	5,326	8,818			
Married, Spouse Absent	81	14	33	23	11	402	76	170	42	119			
Widowed	1,738	4	49	405	1,280	6,590	12	233	407	5,938			
Divorced/Separated	1,582	112	870	464	136	5,676	395	3,170	958	1,153			
Never Married	3,295	2,267	702	149	177	11,809	8,195	2,564	285	765			

SOURCE: See Table 1.

### SECTION THREE: A Comparison of Marital Status, Educational Attainment and Labor Force Status

#### Marital Status

Table 5 investigates the similarity of marital status data. The population age 15 and over has been classified by age, sex, race and their marital status in March, 1985. Weighted data have been used to obtain these distributions.

[Table 5]

At the outset, we note that the sampling and weighting procedures used with both CPS and SIPP produced the same total population estimates. That is, the control totals for both surveys were the same with regard to a few basic demographic characteristics including sex, race, broad age groups and household types. That it why it is not surprising that the estimated population counts in Table 5 - for broad categories - from SIPP and CPS are very similar or even identical in some cases.

Turning attention to the distribution of population by marital status, we find a very close correspondence between the SIPP and CPS estimates. For most age-sex-race groups, the proportion in a given marital status are quite similar from the two sources. It is extremely tedious to compare the numerous arrays of numbers in Table 5 so Figure A presents summary findings. Using an age standardization procedure which weighs each of five ten year age groups equally, we show the number of years a person would spend in each marital status according to the information reported in SIPP or CPS. Data in this figure refer to a synthetic cohort which survives from age 15 to 64. It indicates how many years a person would spend in each of these statuses if he or she survived for this entire span.

[Figure A]

This figure very clearly indicates the similarity of marital status information from the two sources. For men and women of both races, the number of years spent living with a spouse was slightly greater in SIPP than in CPS but the differences were extremely small, about one-tenth of a year for the fifty year span. There were no other consistent discrepancies between the two data sources.

TABLE 5. Marital Status by Race, Age and Sex; from March, 1985 CPS and Contemporaneous SIPP

PC = Population Count  
 MSP = Married, Spouse Present  
 MSA = Married, Spouse Absent  
 WID = Widowed  
 DIV = Divorced  
 NM = Never Married

	Total Population		15-24		25-34		35-44		45-54		55-64		65-74		75+	
	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP
- TOTAL POPULATION -																
PC	177,198	177,258	37,562	37,398	39,521	39,586	30,237	30,414	21,745	21,755	21,663	21,647	16,319	16,304	10,121	10,154
MSP	56.1	56.4	16.4	16.7	61.4	61.7	74.0	74.7	75.8	77.3	73.7	73.7	62.3	62.3	39.3	36.6
MSA	3.2	3.0	1.6	1.0	4.1	4.3	4.4	4.2	4.1	4.2	2.9	3.1	2.1	1.7	1.4	1.7
WID	7.4	7.3	.1	0	.4	.6	1.2	1.0	4.2	3.4	10.9	10.3	25.9	25.4	51.0	51.5
DIV	7.3	7.4	1.4	1.4	9.1	8.8	12.3	12.6	10.5	10.1	7.7	8.4	5.0	5.2	2.5	3.7
NM	26.1	25.9	80.5	80.9	25.0	24.6	8.1	7.6	5.4	5.1	4.8	4.5	4.8	5.4	5.8	6.6
- WHITE MEN -																
PC	75,461	75,275	16,070	15,936	17,331	17,204	13,367	13,470	9,492	9,500	9,254	9,249	6,543	6,513	3,404	3,404
MSP	61.3	61.7	12.7	12.5	61.5	62.3	78.3	78.9	81.6	84.1	83.1	83.0	80.5	80.1	69.8	65.0
MSA	2.2	2.1	1.1	.6	2.7	3.0	2.9	2.6	3.2	2.5	1.8	2.0	1.8	1.3	1.9	2.6
WID	2.3	2.5	0	0	0	.3	.3	.4	1.1	1.0	3.3	3.1	8.9	8.1	20.5	24.9
DIV	6.0	6.3	.8	.7	8.0	8.2	10.0	10.1	8.4	7.6	5.9	7.1	3.9	5.0	2.5	3.8
NM	28.2	27.5	85.4	86.1	27.8	26.2	8.6	8.1	5.7	4.9	5.9	4.8	4.9	5.5	5.2	1.0
- WHITE WOMEN -																
PC	81,582	81,745	16,094	16,083	17,331	17,427	13,613	13,669	9,906	9,899	10,375	10,362	8,364	8,346	5,900	5,958
MSP	56.6	56.8	23.1	23.7	68.2	68.4	75.3	75.7	75.9	77.0	69.8	69.2	50.8	51.2	23.6	21.2
MSA	2.8	2.5	2.2	1.1	4.1	3.9	4.1	3.7	2.6	3.4	2.2	2.0	1.6	1.2	.9	.7
WID	11.8	11.8	.1	.1	.7	.7	1.6	1.2	5.7	4.9	15.8	15.4	37.7	36.9	66.8	65.9
DIV	8.0	8.2	2.2	2.4	10.0	9.7	13.4	13.9	11.7	11.0	8.4	9.3	5.5	5.3	2.4	3.4
NM	20.7	21.1	72.4	72.8	17.0	17.2	5.6	5.4	4.0	3.8	3.7	4.1	4.4	5.5	6.3	8.7

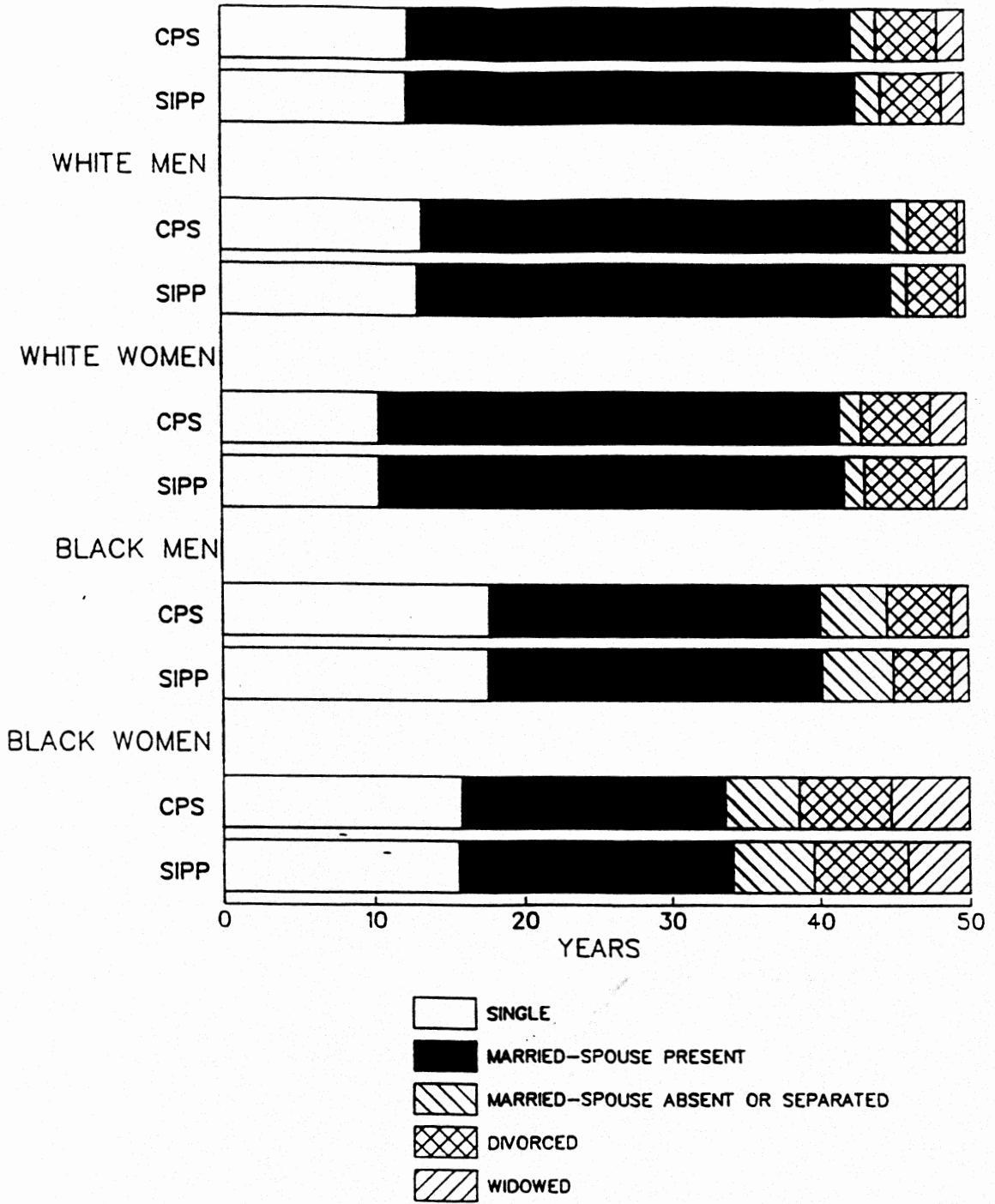
TABLE 5. (Continued)

	Total Population		15-24		25-34		35-44		45-54		55-64		65-74		75+	
	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP
- BLACK MEN -																
PC	9,144	9,170	2,589	2,591	2,232	2,251	1,466	1,475	1,053	1,056	914	905	591	591	300	299
MSP	38.9	39.6	5.6	6.1	38.7	39.4	56.7	56.4	61.5	64.1	61.7	59.7	63.3	65.8	42.7	50.3
MSA	7.3	7.1	1.0	.5	8.0	6.0	11.0	11.0	12.8	10.7	11.9	19.3	7.2	5.4	3.3	5.5
WID	3.5	3.6	0	0.3	.2	.2	.5	0	1.9	1.6	8.7	9.0	13.3	18.0	44.3	37.5
DIV	7.0	5.9	.1	0	6.4	2.7	14.4	14.7	11.7	13.6	10.1	8.1	8.3	6.7	4.4	2.4
NM	43.3	43.8	93.2	93.1	46.7	51.7	17.3	17.8	12.1	9.9	7.6	3.9	7.8	5.4	5.3	4.3
- BLACK WOMEN -																
PC	11,096	11,107	2,827	2,807	2,676	2,713	1,805	1,808	1,306	1,301	1,133	1,131	830	855	518	493
MSP	31.2	31.9	9.4	9.6	35.2	33.3	45.7	50.5	44.5	40.9	43.3	49.7	33.5	31.7	15.1	17.7
MSA	8.5	9.8	2.3	2.8	10.6	14.1	13.0	13.2	14.6	16.6	9.3	8.3	5.9	8.1	1.6	2.7
WID	13.3	11.8	.3	0	1.1	1.5	4.8	4.7	16.1	11.0	29.7	24.2	49.4	40.0	75.7	69.9
DIV	10.2	10.6	1.1	1.0	11.7	12.5	20.0	19.4	15.7	18.7	13.2	12.0	6.8	5.7	2.8	6.0
NM	36.9	36.0	86.8	86.6	41.5	38.6	16.5	12.3	9.1	12.7	4.5	5.8	4.4	5.5	4.8	3.8



FIGURE A. Estimated Years Spent in Each of Five Marital Statuses as Individuals Age from 15 to 64, March, 1985 Current Population Survey and Corresponding Data from SIPP

TOTAL POPULATION



Using the information in Table 5, we can test the hypothesis that the proportion in a given marital status category was the same in SIPP and CPS, that is, that the difference between the two proportions was zero. For example, the percent of black men age 15 and over who were married and living with their wife was 39.6 percent in SIPP and 38.9 percent in CPS. Using weighted data to obtain these percentages, but the actual sample sizes, and making the assumption that there were no design effects in either survey allows this test. That is, we get a pooled estimate of the mean and its standard deviation by assuming that each survey is a random sample. We tested to determine if the observed difference in percent married, spouse present is significantly different from zero, and concluded that it was not.

The SIPP survey found that 36.0 percent of the black women age 15 and over had never married; CPS, 36.9 percent. Once again, using the actual sample sizes and the assumption of no design effects leads to acceptance of the hypothesis that the proportion never-married was the same in both samples.

#### Educational Attainment

[Table 6]

Information about the educational attainment of the adult population is reported in Table 6 which refers to black and white men and women age 25 and over. Three measures of attainment are shown: the percent who reported completing high school, the percent who said they completed college and the median attainment of the age group. A look at these measures shows that SIPP and CPS give very similar views of attainment levels. The maximum difference between a SIPP and CPS estimate of the percent who finished high school was three points, and involved a group with a very small sample size - black women age 65 and over. The greatest difference between two estimates of the percent completing four or more years of college was less than three percentage points and also involved a group with a small sample size: black men who were 55 to 64 in 1985. There was only one instance in which the median attainment of a group as estimated from SIPP differed by more than two-tenths of a year from the CPS estimate and that involved black women age 65 and over.

TABLE 6. Educational Attainment by Race, Age and Sex; from March, 1985 CPS and Contemporaneous SIPP

	Total		25-34		35-44		45-54		55-64		65+	
	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP
- TOTAL POPULATION -												
Number	139,702	139,878	39,564	39,595	30,256	30,422	21,758	21,755	21,676	21,647	26,416	26,458
% High School Graduates	73.8	72.5	86.7	85.3	84.0	83.4	75.6	73.1	65.8	63.3	48.2	47.1
% College Graduates	19.0	18.7	23.4	22.5	25.7	25.0	18.2	16.3	14.4	14.3	9.4	10.7
MEDIAN	12.6	12.7	12.9	13.0	12.9	13.0	12.6	12.6	12.4	12.4	11.7	11.5
- WHITE MEN -												
Number	59,416	59,340	17,338	17,204	13,375	13,470	9,497	9,450	9,259	9,249	9,947	9,917
% High School Graduates	76.0	74.6	87.5	85.0	85.6	85.7	77.3	75.4	67.8	65.3	49.4	49.6
% College Graduates	24.0	23.1	26.2	25.3	32.3	31.3	24.2	21.8	20.7	19.8	12.0	12.6
MEDIAN	12.7	12.8	13.0	13.2	13.3	13.3	12.7	12.7	12.5	12.5	11.9	11.9
- WHITE WOMEN -												
Number	65,510	65,662	17,339	17,428	13,621	13,669	9,909	9,899	10,378	10,362	14,263	14,304
% High School Graduates	75.1	73.3	88.1	87.2	85.1	84.1	78.4	75.6	69.1	65.8	51.5	49.8
% College Graduates	16.3	16.4	23.3	22.6	21.6	21.4	14.5	12.8	10.1	11.2	8.3	10.3
MEDIAN	12.6	12.6	12.9	13.0	12.8	12.9	12.6	12.6	12.4	12.4	12.0	12.0
- BLACK MEN -												
Number	6,556	6,578	2,232	2,251	1,466	1,475	1,053	1,056	914	905	891	891
% High School Graduates	58.4	60.2	79.2	79.0	69.7	71.5	51.3	52.4	33.7	42.9	21.2	21.0
% College Graduates	11.2	11.1	13.5	14.6	16.1	15.3	8.9	6.7	6.1	5.7	4.8	5.8
MEDIAN	12.3	12.3	12.7	12.8	12.6	12.6	12.0	12.0	9.9	10.0	7.4	7.4
- BLACK WOMEN -												
Number	8,268	8,301	2,676	2,713	1,805	1,808	1,306	1,301	1,133	1,131	1,349	1,348
% High School Graduates	60.8	58.6	80.1	80.3	73.2	69.9	60.5	54.2	41.7	40.8	22.5	19.3
% College Graduates	11.0	9.6	14.0	11.1	14.5	12.7	10.3	10.6	7.4	4.6	4.2	6.0
MEDIAN	12.3	12.4	12.7	12.5	12.6	12.5	12.3	12.1	10.9	11.0	8.3	8.8

There is no evidence suggesting that educational attainment was estimated from SIPP is consistently greater or smaller than when estimated from CPS. We tested and confirmed the hypotheses that the percent high school graduate for blacks age 25 and over was the same from both sources for men and women.

#### Labor Force Status

Information about labor force status in March, 1985 is shown in Table 7. Persons are classified as "at work", "unemployed", or "out of the labor force". Figure B shows the estimated number of years a person would spend in each of these three labor force statuses as they aged from 15 to 64 according to the labor force activities reported in SIPP and CPS.

[Table 7 and Figure B]

The estimates derived from CPS and SIPP differ slightly. The proportion of both men and women who were at work was higher in SIPP than in CPS reflecting, perhaps, the slight difference in definition of employment used here. (For a comparison of SIPP and CPS labor force concepts, see Ryscavage, 1984). The proportion who were out of the labor force was higher in CPS than in SIPP. Such differences are not substantial but they were consistent. According to CPS, if a white man experienced the labor force rates of March, 1985 he would work for 39.4 years and be out of the labor force for 8.2 as he aged from 15 to 64. According to SIPP, he would work 40.0 years and be out of the labor force one-half year less; that is, 7.7 years. For black men, the difference between the CPS and SIPP estimates of being out of the labor force were even larger. According to SIPP estimates, a black man would spend 11.5 years out of the labor force; from CPS, 13.6 years. When we compare the percent of black men - or black women - out of the labor force as reported in CPS and SIPP we cannot accept the hypothesis that the difference equal zero. SIPP appears to estimate a significantly lower proportion of blacks "out of the labor force" than CPS.

Quite likely these differences come about because SIPP includes a larger array of questions dealing with employment and job search activities than does CPS. As a result, SIPP may produce estimate of the size of the labor force which are slightly greater than those derived

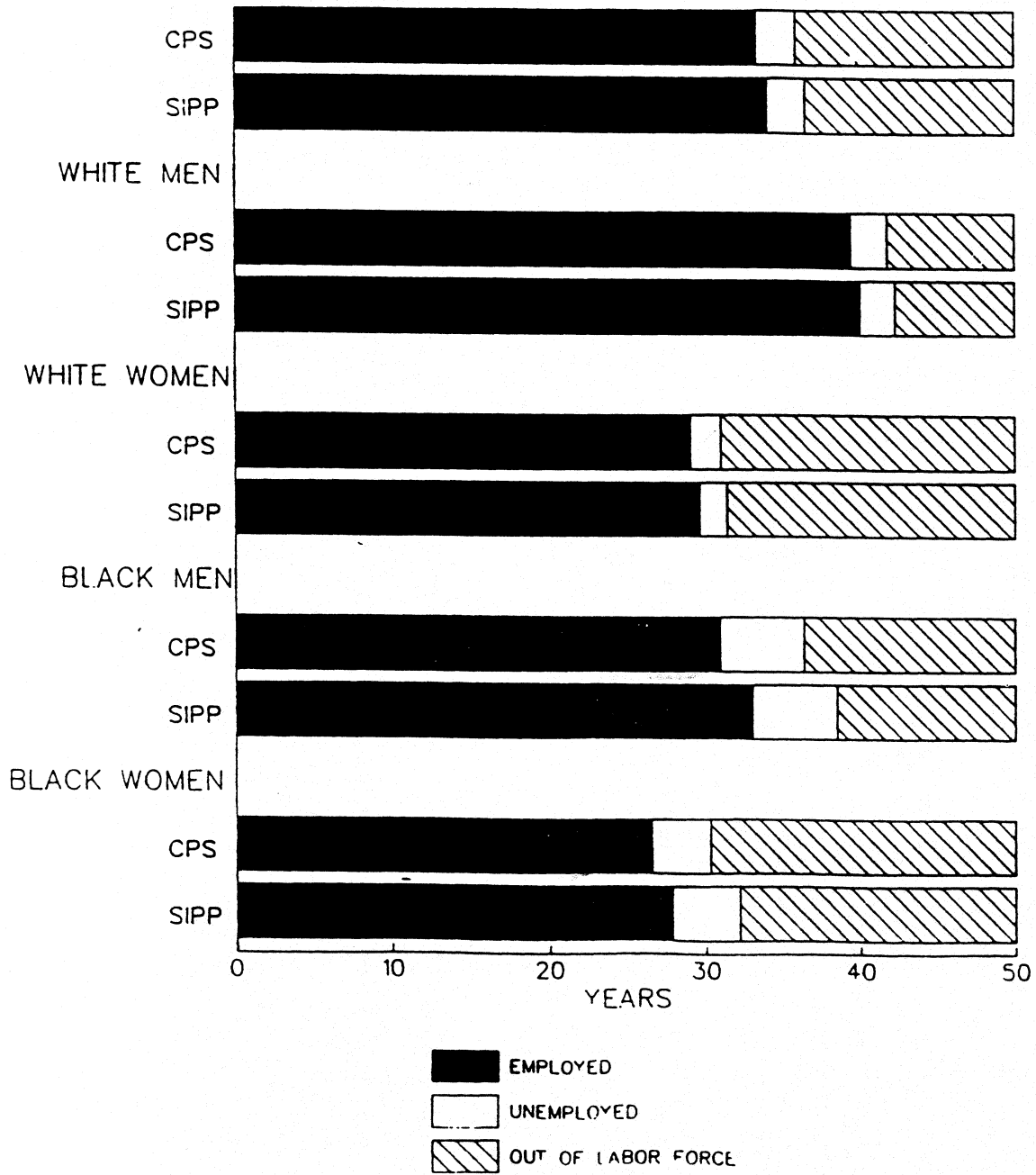
TABLE 7. Labor Force Status by Race, Age and Sex; from March, 1985 CPS and Contemporaneous SIPP

PC = Population Count  
 AW = At Work  
 UN = Unemployed  
 OLF = Out of Labor Force

	Total Population		15-24		25-34		35-44		45-54		55-64		65-74		75+	
	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP
- TOTAL POPULATION -																
PC	176,349	177,269	37,333	37,414	39,168	39,580	30,026	30,414	21,706	21,755	21,671	21,647	16,325	16,304	10,121	10,154
AW	58.4	60.2	52.4	55.9	76.4	78.0	78.2	79.4	73.7	74.3	52.1	53.5	14.9	15.4	4.0	4.3
UN	4.9	4.6	8.8	10.0	6.1	5.9	4.5	4.1	4.1	3.0	2.5	2.0	.6	.5	.1	0
OLF	36.7	35.3	38.8	35.0	17.5	16.1	17.3	16.7	22.2	22.7	45.4	44.5	84.5	84.0	95.9	95.7
- WHITE MEN -																
PC	74,729	75,275	15,880	15,936	17,012	17,204	13,180	13,470	9,456	9,500	9,254	9,249	6,542	6,513	3,404	3,404
AW	69.8	71.8	60.5	62.3	88.8	90.4	90.9	92.5	87.1	88.5	66.2	65.8	20.2	21.8	7.7	6.4
UN	5.1	4.5	8.9	8.6	6.1	5.1	4.6	4.0	4.5	3.4	3.0	2.2	.8	.4	.2	0
OLF	25.1	23.7	33.0	29.1	5.1	4.5	4.5	3.6	8.4	8.1	30.8	31.9	78.0	77.8	92.1	93.6
- WHITE WOMEN -																
PC	81,598	81,745	16,102	16,084	17,334	17,427	13,615	13,669	9,909	9,899	10,378	10,362	8,364	8,346	5,900	5,958
AW	49.9	50.9	53.4	55.2	66.8	68.1	67.8	67.6	62.1	62.1	40.6	43.3	10.6	10.9	1.8	3.2
UN	3.5	3.2	6.7	6.6	4.3	4.2	3.4	3.1	3.4	2.4	1.9	1.3	.3	.6	.1	0
OLF	46.6	45.7	39.9	38.3	28.9	27.7	28.8	29.3	34.5	35.5	57.5	55.4	89.1	88.6	98.1	96.8
- BLACK MEN -																
PC	9,003	9,170	2,548	2,592	2,163	2,251	1,438	1,475	1,409	1,056	914	905	591	591	300	299
AW	54.8	58.9	36.4	42.7	72.3	75.4	75.7	78.1	75.7	76.2	49.1	57.4	18.3	19.6	4.1	6.4
UN	11.4	12.2	16.8	19.7	13.1	16.2	11.4	8.8	8.2	5.4	5.4	5.3	1.6	1.5	.7	0
OLF	33.8	28.8	46.8	37.7	14.6	8.4	12.9	13.1	16.1	18.5	45.5	37.3	80.1	79.0	95.2	93.6
- BLACK WOMEN -																
PC	10,900	11,107	2,632	2,806	2,676	2,713	1,805	1,808	1,306	1,301	1,133	1,131	830	855	518	493
AW	46.9	49.4	32.0	36.5	61.5	66.4	65.7	70.9	62.2	61.6	44.2	42.8	14.2	10.5	3.6	1.6
UN	7.9	9.1	12.4	16.4	11.3	12.4	7.7	7.5	3.8	3.6	2.3	3.6	.9	0	.5	0
OLF	45.2	41.4	55.6	47.1	27.2	21.1	26.6	21.6	34.0	34.8	53.5	53.7	84.9	89.4	95.9	98.4

FIGURE B. Estimated Years Spent in Each of Three Labor Force Statuses as Individuals Age from 15 to 64, March, 1985 Current Population Survey and Corresponding Data from SIPP

TOTAL POPULATION



EMPLOYED  
 UNEMPLOYED  
 OUT OF LABOR FORCE

from the Current Population Survey. In recent years, CPS has reported that a rather large proportion of adult black men are not participants in the labor force - 12.1 percent among black men 25 to 54 in 1987 (U.S. Bureau of Labor Statistics, 1988, Table 3). This may be an overestimate in light of these data from SIPP.

#### SECTION FOUR: The Determinants of Unemployment and Earnings: A Further Comparison of SIPP and CPS

As a final step in this comparison of SIPP and CPS, we examined the determinants of unemployment and earnings. The analysis of joblessness was restricted to black and white men and women age 25 to 64. Table 8 shows the estimated unemployment rates, that is, the percent of labor force unemployed in March, 1985, and parameters from models which have the log of the odds of unemployment as their dependent variable. The models treat unemployment as a function of a dichotomous region variable which distinguishes the South, a three category educational attainment variable, a three category age variable and a dichotomous marital status variable which distinguishes those who were married and lived with a spouse.

#### [Table 8]

Unemployment rates from the two sources are quite similar with the exception of that for black women where the SIPP rate was about 75 percent larger than the one from CPS, a difference which was significant at the .01 level. Looking at the fit of the log-linear models, we find that interaction terms are needed with the exception of the model based upon SIPP data for black women. The independent variables, however, were related to unemployment in the same manner for data sets. That is, unemployment rates were lower in the South, net of other variables and, for each group, they decreased with rising educational attainment. Both SIPP and CPS reported that unemployment also declined with age and that married-spouse-present men and women had lower unemployment rates than people in other marital statuses.

It is not easy to compare the numerous coefficients shown in Table 8, so Figure C presents estimated unemployment rates for three selected groups. The upper panel compares unemployment rates for an extensively educated, older, married-spouse-present population

TABLE 8. Analysis of Determinants of Unemployment in March, 1985: A Comparison of SIPP and the March, 1985 CPS<sup>a</sup>

	White Men		Black Men		White Women		Black Women	
	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP
	5.8%	4.4%	10.7%	12.5%	4.3%	4.5%	6.5%	11.4%
- ESTIMATED UNEMPLOYMENT RATES FOR PERSONS 25 TO 64 -								
Intercept	-2.6398	-2.8970	-2.1668	-2.0710	-2.9778	-2.9824	-2.6604	-2.1724
Region								
South	-.1756	-.1394	-.2110	-.1360	-.0222	-.1388	-.0856	-.1242
North and West	.1756	.1394	.2110	.1360	-.0222	.1388	.0856	.1242
Educational Attainment								
Less than 12 Years	.5120	.7392	.3124	.5652	.2138	.8360	.5304	.6246
12 Years	-.0234	-.0114	.0092	.0602	-.1432	-.1962	-.0980	-.1076
More than 12 Years	-.4886	-.7278	-.3216	-.6258	-.0706	-.6398	-.1324	-.5170
Age								
25-34	.0112	.1848	.0796	.4830	.0122	.4058	.3296	.5644
35-49	.0548	.0022	.1824	-.0750	.0232	.0130	-.1762	-.0940
50-64	-.0660	-.1872	-.2620	-.4080	.0110	-.4188	-.1534	-.4704
Marital Status								
Married, Spouse Present	-.3170	-.4228	-.4530	-.4426	-.1210	-.1542	.2332	-.2688
Other	.3170	.4228	.4530	.4426	.1210	.1542	.2332	.2688
L.R. X <sup>2</sup>	46.73	51.93	60.76	40.75	51.02	43.58	47.39	27.61
Degrees of Freedom	29	29	29	29	29	29	29	29
Probability	.02	<.01	<.01	.07	<.01	.04	>.02	>.50

<sup>a</sup>These are logit models which use the log of the odds of unemployment for those in the labor force as their dependent variable. The percent unemployed in any group may be estimated by summing the intercept and the effects parameters associated with that group. For example, to use CPS data to estimate the unemployment rate among black men 35 to 49 who lived outside the South, who completed 13 or more years of education, and who were married-spouse-present, one would sum -.2168, +.1824, +.2110, -.33216, and -.4530. The sum, -.2548, is the log of the odds of unemployment for black men in this group. Converting this to a percentage leads to an estimated unemployment rate of 7.3 percent.

SOURCE: See Table 1.



living outside the South. Data in the bottom panel refer to a younger, less extensively educated unmarried population living in the South.

[Figure C]

The differences between the SIPP and CPS estimates of unemployment are not consistent. For the group with little unemployment, the CPS rates are larger - in one case double - the estimates rates from SIPP. At the other extreme, when we look at the group with high unemployment, we find that the rates estimated from SIPP are larger than those estimated from CPS. Returning to the effects parameters in Table 8, we can see why this occurs: the relationships of educational attainment to unemployment and age to unemployment are much stronger in SIPP than in CPS. That is, the SIPP data suggest that increases in schools and in age reduce unemployment by considerably greater amounts than do the CPS data.

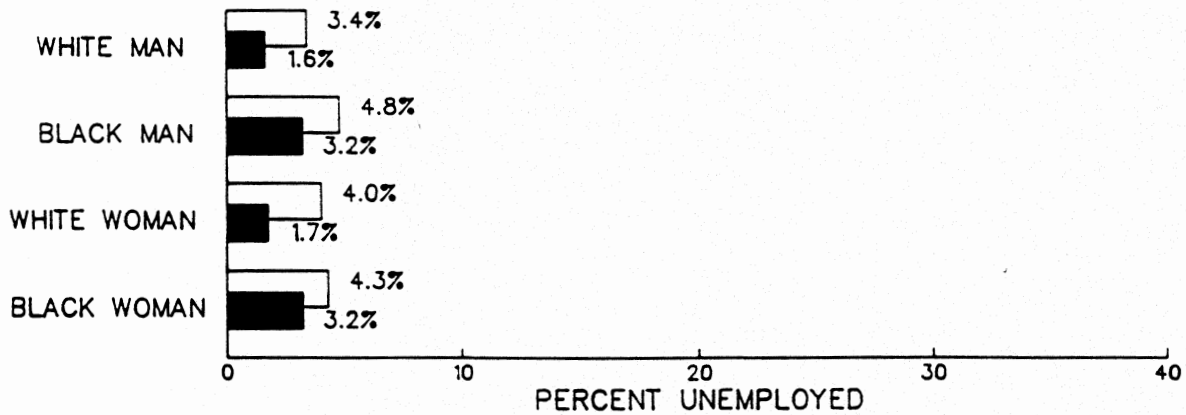
Data about earnings are presented in Table 9. SIPP asked about earnings in the previous month, and responses to that question are used in this table. CPS included a question about earnings in the previous year - 1984 - and weeks worked in that year. We determined average weekly earnings, and then multiplied by 4.35 to obtain an estimate of monthly earnings. People who reported no earnings were deleted from this analysis. The estimates of monthly earnings from the two sources are remarkably close. The biggest discrepancy is among black women. Their average monthly earnings as estimated from CPS were about 11 percent greater than those estimated from SIPP. For the other groups, the CPS estimates were one to four percent larger those based on SIPP data.

[Table 9]

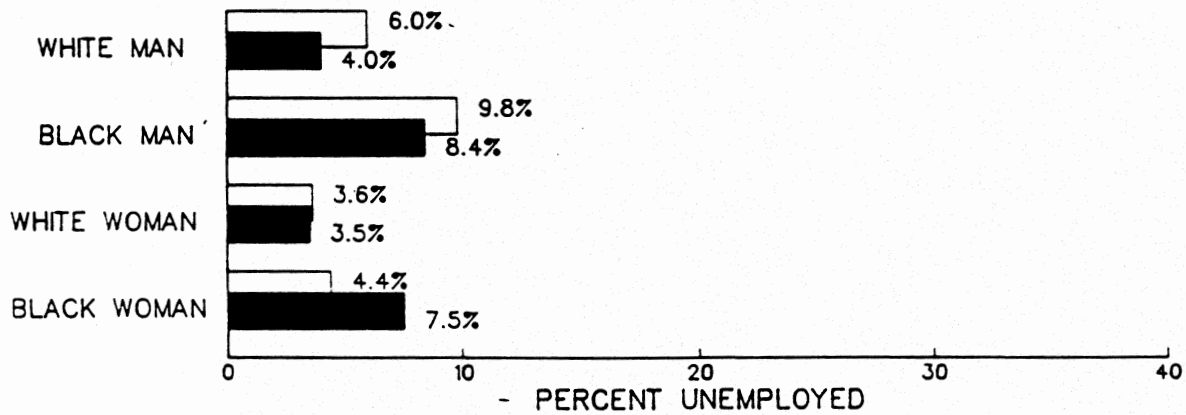
Five independent variables were used to predict monthly earnings. Each person was given a score equal to the number of years of elementary and secondary schooling and another equalling their reported years of college education. Years of potential labor force experience were estimated by taking a respondent's current age subtracting six and then subtracting the total years of schooling. The square of the years of potential labor force experience variable was also included since wage rates generally do not increase linearly with years of experience throughout

FIGURE C. Estimates of Unemployment Rate for Selected Groups; Data from March, 1985 CPS and Contemporaneous SIPP

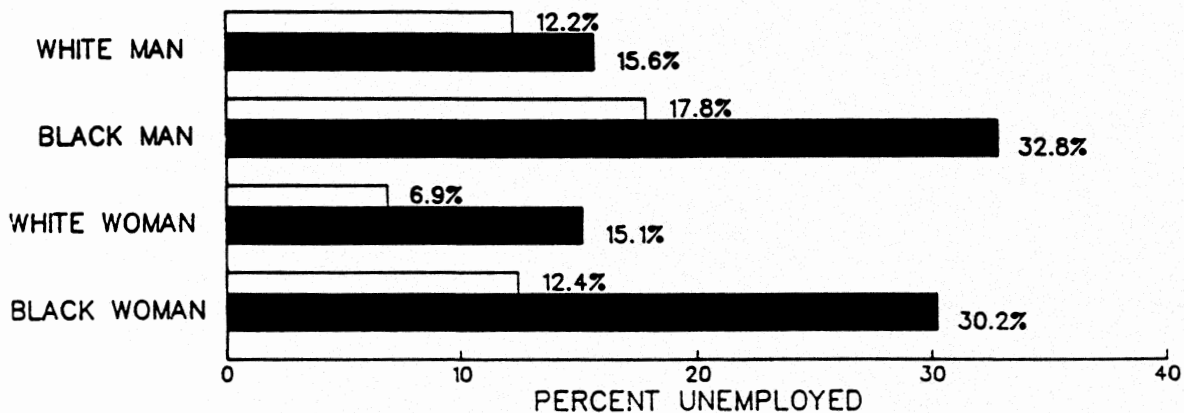
PANEL A. MARRIED-SPOUSE-PRESENT PERSON, AGE 50 TO 64 WITH 13 OR MORE YEARS OF EDUCATION LIVING OUTSIDE THE SOUTH



PANEL B. MARRIED-SPOUSE-PRESENT PERSON, AGE 35 TO 49 WITH 12 YEARS OF EDUCATION LIVING OUTSIDE THE SOUTH



PANEL C. NEVER-MARRIED PERSON, AGE 25 TO 34 LESS THAN 12 YEARS OF EDUCATION LIVING IN THE SOUTH



ESTIMATES FROM SIPP
  ESTIMATES FROM CPS

TABLE 9. Regression of Monthly Earnings on Predictor Variables: Comparison of Results from March, 1985 CPS and Contemporaneous SIPP for Persons 25 to 64

	White Men		Black Men		White Women		Black Women	
	CPS	SIPP	CPS	SIPP	CPS	SIPP	CPS	SIPP
Monthly Earnings	\$2,209	\$2,122	\$1,476	\$1,455	\$1,158	\$1,132	\$1,128	\$1,016
LN of Monthly Earnings	7.453	7.444	7.061	7.074	6.716	6.748	6.804	6.710
LN of Earnings in Dollars	\$1,726	\$1,710	\$1,166	\$1,181	\$825	\$852	\$901	\$820
Elementary and Secondary Education	11.4	11.4	10.9	11.0	11.6	11.5	11.3	11.3
College Education	1.7	1.7	1.0	1.1	1.4	1.5	1.1	1.0
Years of Labor Force Experience	21.5	21.1	21.5	21.6	21.2	21.1	21.0	20.8
Years of Labor Force Experience Squared	602	578	608	606	582	582	578	557
%Married, Spouse Present	75	77	56	58	68	67	44	44
%in South	32	32	54	51	32	31	54	53
	30,299	6,835	3,045	589	23,887	5,160	3,226	706
	- SAMPLE SIZE <sup>a</sup> -							
	- COEFFICIENTS FROM REGRESSION EQUATION -							
Intercept	5.912	6.208	5.840	6.025	6.175	6.357	5.641	5.780
Elementary and Secondary Education	.067*	.041	.062*	.058	.046*	.022	.084*	.063
College Education	.093*	.098	.113*	.116	.111*	.109	.134*	.133
Years of Labor Force Experience	.039*	.043	.026*	.017	.018*	.017	.017*	.027
Years of Labor Force Experience Squared	-.00068*	-.00077	-.00038*	-.00017	-.00018*	-.00037	-.00033*	-.00059
Married, Spouse Present	.268*	.214	.265*	.177	-.324*	-.264	.048	-.001
Lives in South	-.050	-.046	-.101	-.159	.014	.074	.222*	-.309
R <sup>2</sup>	.104	.157	.138	.173	.065	.093	.143	.217

<sup>a</sup>Sample size shows the actual number of cases. Regression models were fitted with weighted data. \*Significantly different from zero at .50 level, assuming simple random sampling. Significance of coefficients in SIPP regression models not tested.

SOURCE: See Table 1.

the entire life span. Because married-spouse-present men earn more than other men while married-spouse-present women earn less than other women, a dichotomous variable indicating marital status was included. Finally, since wage rates in the South remain below those in other regions, a dichotomous region variable identified this section of the nation. (For other examples of the fitting of earnings equations with SIPP data, see: U.S. Bureau of the Census, 1987). Table 9 presents the means of the variables used in this analysis and shows coefficients from the regression models. Figure D reports estimated monthly earnings from CPS and SIPP for three selected groups.

[Figure D]

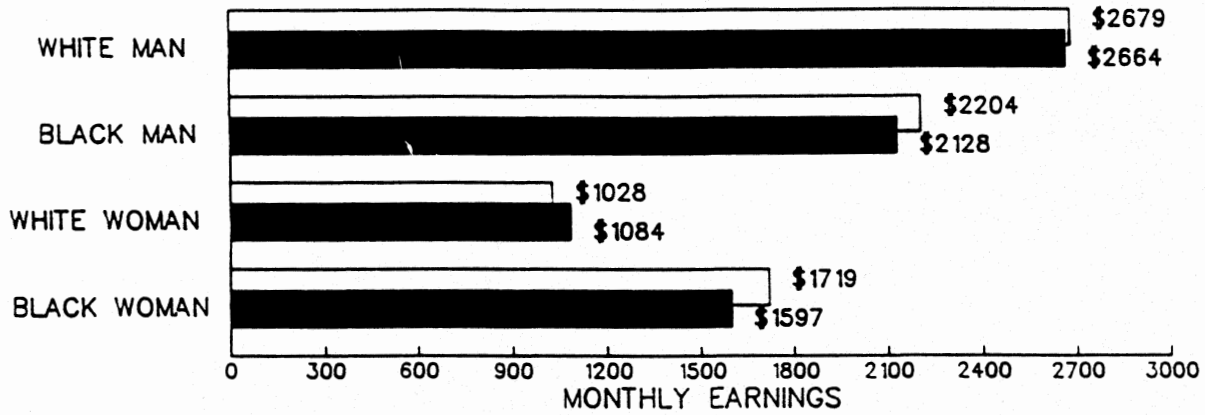
An examination of the three panels of Figure D shows that, in every instance, monthly earnings estimates from SIPP were nearly equal to those estimated from CPS. A look at the regression coefficients in Table 9 suggests the reasons for this. The earnings returns associated with investments in education were very much the same in the two sources. The regression coefficients also indicate that the increments in earnings associated with years of labor market experience were similar.

#### CONCLUSION

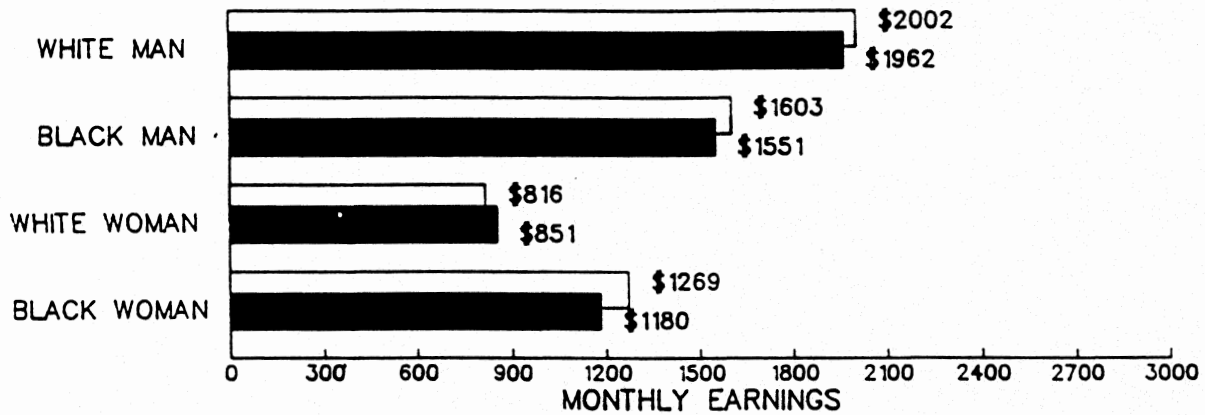
This investigation, we believe, suggests that sample sizes in SIPP are sufficiently large to support extensive analysis of black-white differences and allows, to a more limited degree, comparisons within the diverse black population. Furthermore, we are confident that estimates of basic demographic, social and economic characteristics in SIPP are similar to those obtained in CPS. That is, estimates of educational attainment and marital status for blacks obtained from the two sources were very similar although SIPP procedures lead to estimates of labor force participation which exceed those of CPS. Both data sources provide similar information about the determinants of unemployment rates and earnings. Indeed, the earnings models based on data from the two sources are remarkably similar implying, once again, the value of SIPP for the analysis of racial differences.

FIGURE D. Estimates of Monthly Earnings for Selected Groups; Data from March, 1985 CPS and Contemporaneous SIPP

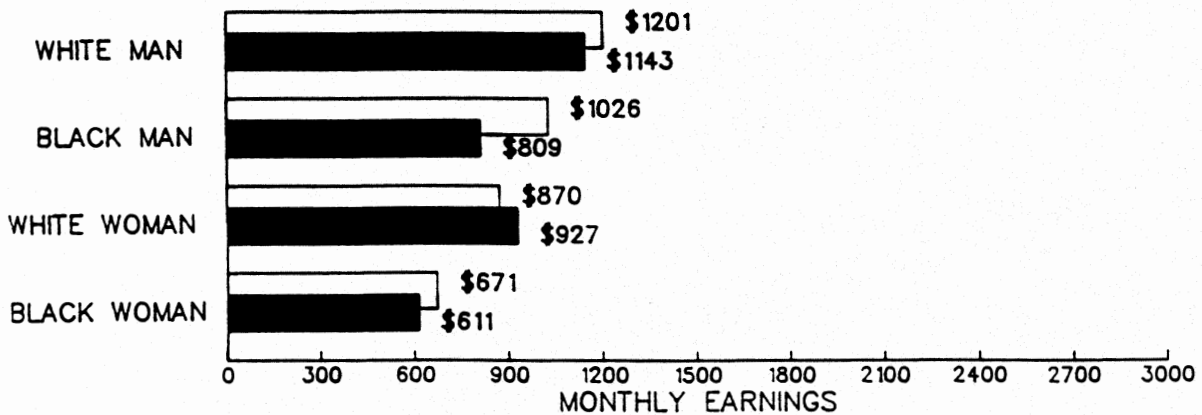
PANEL A. MARRIED-SPOUSE-PRESENT PERSON, AGE 45 WITH 16 YEARS OF EDUCATION LIVING OUTSIDE THE SOUTH



PANEL B. MARRIED-SPOUSE-PRESENT PERSON, AGE 35 WITH 14 YEARS OF EDUCATION LIVING OUTSIDE THE SOUTH



PANEL C. NEVER-MARRIED PERSON, AGE 30 WITH 11 YEARS OF EDUCATION LIVING IN THE SOUTH



ESTIMATES FROM SIPP
  ESTIMATES FROM CPS

## BIBLIOGRAPHY

David, Martin

1985 "Introduction: The Design and Development of SIPP," Journal of Economic and Social Measurement, Vol. 13, Nos. 3 and 4, (December), Pp. 215-224.

Ryscavage, Paul

1984 "SIPP and CPS Labor Force Concepts: A Comparison," Proceeding of the Social Statistics Section, American Statistical Association, 1984. Pp. 523-528.

U.S. Bureau of the Census

1987 "Male-Female Differences in Work Experience, Occupation, and Earnings: 1984," Current Population Reports, Series P-70, No. 10 (August)

U. S. Bureau of Labor Statistics

1988 Employment and Earnings. Vol. 35, No. 1 (January).