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A Demographic Evaluation of the 1988 Dress Rehearsal Post-Enumeration Survey Results

by

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Executive Summary

This report used sex ratios to examine the consistency in the 1988 Dress Rehearsal data. As an evaluation tool, sex ratios have limited application because subgroups in the population may have sex ratios that deviate considerably from expected values. However, as a general indicator of the quality of the data, the sex ratios can point to unexpected extremities in the age-sex distribution.

The Post-Enumeration Survey (PES) produced the P-sample, the E-sample and the Dual System Estimates. Sex ratios were computed for these three data sources for different post-strata and compared with the original census enumeration. The post-stratum represents the finest level of detail for which dual system estimates are produced. The post-strata are defined by characteristics of the persons enumerated in the PES. The strata are as homogeneous as possible with respect to the census undercount.

Comparisons were made in all three Dress Rehearsal sites: St. Louis, Missouri, East Central Missouri, and Eastern Washington State. A sex ratio above 100 denotes an excess of males; a sex ratio below 100 denotes an excess of females. Overall, based on the sex ratios, the estimates for St. Louis and East Central Missouri were reasonable, with ratios close to one hundred for the younger age groups, and declining sex ratios for the older cohorts. In Washington State, the sex ratios showed more deviations than the sex ratios in the other two test sites.

The differences between the sex ratios within each site were also examined. In particular, it was of interest to notice the deviations of the E-, P- and the DSE results from the original enumeration. Such differences may reflect large sampling errors rather than differences in coverage. To evaluate these differences, their standard errors were computed. Significant differences ($p<.05$) appeared in all three sites.

All significant differences between the P-sample and the census were negative, indicating that the P-sample had lower sex ratios than the census, i.e., that it produced less males. The E-sample had a number of significant differences when comparisons were made with the census. In one test site, St. Louis, one of the significant differences was negative, and six of these differences were positive, suggesting that the DSE produced several sex ratios that were higher than the census and not within sampling error. In the other two test sites, there were one and two significant DSE-census differences, respectively. All three differences had negative signs.

1. Background

In 1988, the Census Bureau conducted a Dress Rehearsal program of the 1990 census procedures. The Post-Enumeration Survey (PES) was an important aspect of this program, because the data from the survey were used to evaluate coverage in the census. The Dress Rehearsal was conducted in three sites: St. Louis, Missouri, East Central Missouri, and Eastern Washington State. These test sites were chosen because they represented different enumeration conditions and data processing methodologies.

To measure net coverage, the PES requires two samples: the P-sample and the E-sample. The P-sample is a population sample obtained independently from the census. It is used to measure omissions. The E-sample is an enumeration sample. It consists of all enumerations assigned to the sample blocks by the census process. It is used to measure duplicates and other errors included in the count. An estimate of the total population is formed from these two samples using the dual system estimator (DSE).

This report evaluates the age-sex distributions in the census and the PES data. More specifically, it examines sex ratios produced from the original enumeration (census), the P-sample, the E-sample and the dual system estimator (DSE).

2. Analysis of Sex Ratios

Sex ratios can be used to evaluate if the overall results are reasonable. The sex ratio is usually defined as the number of males per 100 females, or

$$(P_m/P_f) \times 100$$

where,

P_m represents the number of males and P_f the number of females.

One hundred is the point of balance of the sexes according to this measure. Thus, a sex ratio above 100 denotes an excess of males; a sex ratio below 100 denotes an excess of females. Accordingly, the greater the excess of males, the higher the sex ratio; the greater the excess of females, the lower the sex ratio.

The estimates are computed for different PES post-strata. The post-strata represent the finest level of detail for which dual system estimates are produced. The post-strata are defined by characteristics of the persons enumerated in the PES and are as homogeneous as possible with respect to the census undercount. The St. Louis data are post-stratified according to race and home-ownership. For the East Central Missouri data, post-stratification is done according to race and type of enumeration area. Only type of enumeration area is used to post-stratify the data from Washington State.

3. Results

Tables 1, 2 and 3 (Appendix A) and Graphs 1 through 12 (Appendix B) show the distribution of the age-sex ratios by stratum in the three different test sites. (On the graphs, East Central Missouri has been designated as Columbia). Sex ratios are shown for the original enumeration (census), the E-sample, the P-sample and the dual system estimator (DSE). The data used to calculate the sex ratios are presented in the Appendix C.

3.1. Sex Ratio Results in St. Louis

Table 1 compares the sex ratios for St. Louis. For white non-Hispanic renters, both the original enumeration (census) and the dual system estimator (DSE) show an excess of males in the 0-9 and the 30-44 age groups. (In the age group 30-44, the DSE ratio shows a large excess of males (124.00)). Also, the P-sample age group 10-19 has a sex ratio above 100. In all other age groups, and in particular in the age group 65+, there are more females than males - a pattern found in all four data sources. A graphical presentation of the sex ratios for this stratum is provided in Graph 1.

The data collected for white non-Hispanic owners reveal a similar sex ratio pattern. Up to age 45, this subpopulation has more males than females in the census. This pattern is found in the E-sample with the exception of age group 10-19, and in the DSE with the exception of age group 0-9. In the P-sample, an excess of males is found in only the 30-44 age group. In the 45+ ages, there are more females than males in all four data sources (Graph 2).

In the census, the stratum 'all other renters' is primarily a female distribution with the exception of the first age group (0-9). The same pattern appears in the E- and the P-sample. In the DSE estimates, there are less males than females in all age groups except 10-19, where there are 105 males per 100 females (Graph 3).

The 'all other owners' stratum has an almost perfect balance of the sexes for age group 0-9 in the census and the P-sample. However, in the E-sample and the DSE, the population in this age group is less male. In other age categories, the patterns in the four data sources are similar. In the 20-29 age groups, there are more males than females, but otherwise the distributions are 'female' (Graph 4).

Finally, calculations have been made for the total St. Louis sample. Looking at these sex ratios, the overall estimates are reasonable with ratios close to one hundred for the younger age groups, and declining sex ratios for the older cohorts (Graph 5). In St. Louis, there are between 83 and 86 males for every 100 females.

3.2. Sex Ratio Results in East Central Missouri

Sex ratios for the enumerations in the East Central Missouri Tape Address Register area (TAR) are shown in Table 2. For the white non-Hispanic population, there are more males than females in the census and the DSE in the younger age group. Similarly, in age group 30-44, the number of males exceeds the number of females in both the P-sample and the DSE (Graph 6).

The population in non-TAR areas shows an excess of males in the first two age groups (0-9 and 10-19), then a gradual tapering off (Graph 7).

Table 2 also shows the sex ratios for 'all other persons' in East Central Missouri. The census and the E-sample show a population that is primarily female. The only exception is age group 0-9, where there are 103-104 males for every 100 females. The P-sample and the DSE results do not produce the same pattern. In the age group 20-29 (P-sample) and 30-44 (DSE), there are 112 males per 100 females, and in the P-sample the age group 45-64 has 108 males per 100 females. In all other age groups, the sex ratio is below 100 (Graph 8).

Finally, the census and the DSE sex ratios for 'all persons' in East Central Missouri show an excess of males in the 0-9 age group, and a balance of the sexes in the 10-19 age group. In all other age groups, there is an excess of females in all four distributions. For the total population, the overall sex ratio results look reasonable (Graph 9). In East Central Missouri, there are between 91 and 97 males for every 100 females.

3.3 Sex Ratio Results in Washington State

Table 3 shows the data for Washington State. In List/Enumerate areas, the census shows an excess of males in all age groups except 65+. The E-sample produced a population with a large

excess of males in three age groups: 0-9, 20-29 and 65+. The P-sample shows an excess of males only in the age groups 0-9 and 45-64. Finally, the DSE has an excess of males in the 10-19, 30-44 and 45-64 age groups. Overall, the ratios appear to deviate from the expected pattern of more females than males with increasing age (Graph 10).

In areas categorized as 'not in List/Enumerate', the sex ratio pattern is more consistent across the four distributions. The age group 20-29 shows a very large excess of males over females (between 112 - 141 males per every 100 females) (Graph 11).

Finally, for all persons in Washington State, the DSE and the census differ primarily for two age groups: 0-9 and 20-29. The DSE has the population less male in the youngest age group, and more male in the 20-29 age group than the census. Overall, for the total population, the DSE shows more deviation from the original results in this test site than in the other two sites (Graph 12).

4. Sex Ratio Differences

The differences between the sex ratios are compared next. The differences are documented in Tables 4, 5, and 6 and graphically in Charts A through L (Appendix D). Again, for the three different test sites, the results are shown for the differences between the E-sample and the census, the P-sample and the census, and the DSE and the census. The term 'census' refers to the original enumeration. To evaluate these differences, standard errors were computed. The standard errors are presented in parenthesis. Differences, significant at the .05 level or better, are indicated with a star. The discussion will focus only on significant differences.

4.1 Sex Ratio Differences in St. Louis

There are eleven significant differences in the St. Louis data set. The DSE resulted in significantly more males than the census in the age group 30-44 in the white non-Hispanic renter' stratum. The same conclusions can be reached for the 'all other renter' and the 'all persons' strata. In the 'all other renters' stratum, the DSE also produced more males in the 'overall' category. In the 'all persons' stratum, the DSE had significantly more males in the 30-44, 45-64 and the 'total population' categories. Only in the 0-9 age group is the sign on the significant difference between the DSE and the census sex ratios negative. The difference between the E-sample and the census is significant for only one age group: 0-9. In this age group, the E-sample is more male than the census. Finally, one stratum: 'white non-Hispanic owners' contains all the significant differences between the P-sample and the census. Significant differences are found in the age groups 10-19, 20-29 and for the total population. All significant differences are negative, indicating that the P-

sample in these age categories was less 'male' than the census. It should be noted that there are no significant differences in the 'all other owners' stratum (Table 4.1).

Table 4.1 Significant Sex Ratio Differences by Stratum and Age Group for St. Louis

Stratum	0-9	10-19	20-29	30-44	45-64	65+	Total
White Non-Hisp. Renter							
P	---	---	---	---	---	---	---
E	---	---	---	---	---	---	---
DSE	---	---	---	(+)	---	---	---
White Non-Hisp. Owner							
P	---	(-)	(-)	---	---	---	(-)
E	---	---	---	---	---	---	---
DSE	---	---	---	---	---	---	---
All Other Renter							
P	---	---	---	---	---	---	---
E	(+)	---	---	---	---	---	---
DSE	(-)	---	---	(+)	---	---	(+)
All Other Owners							
P	---	---	---	---	---	---	---
E	---	---	---	---	---	---	---
DSE	---	---	---	---	---	---	---
All Persons							
P	---	---	---	---	---	---	---
E	---	---	---	---	---	---	---
DSE	---	---	---	(+)	(+)	---	(+)

4.2 Sex Ratio Differences in East Central Missouri

There are four significant differences in the East Central Missouri data set. In the 'all other persons' stratum, in the age group 10-19, the DSE is significantly lower than the census sex ratios, i.e., less male. The E-sample shows significant differences in the total population in two strata: White non-Hispanic (TAR) and 'all persons.' In both cases, the differences are negative. Only one significant difference emerged for the P-sample: age group 0-9 in the 'white non-Hispanic (TAR)' stratum. The difference is negative, indicating that there were less males in the P-sample than in the census. There were no significant differences in the 'white non-Hispanic not in TAR' stratum (Table 4.2).

Table 4.2 Significant Sex Ratio Differences by Stratum and Age Group for E.C.Missouri

Stratum	0-9	10-19	20-29	30-44	45-64	65+	Total
White Non-Hisp. (TAR)							
P	(-)	---	---	---	---	---	---
E	---	---	---	---	---	---	(-)
DSE	---	---	---	---	---	---	---
White Non-Hisp.(non-TAR)							
P	---	---	---	---	---	---	---
E	---	---	---	---	---	---	---
DSE	---	---	---	---	---	---	---
All Other Persons							
P	---	---	---	---	---	---	---
E	---	---	---	---	---	---	---
DSE	---	(-)	---	---	---	---	---
All Persons							
P	---	---	---	---	---	---	---
E	---	---	---	---	---	---	(-)
DSE	---	---	---	---	---	---	---

4.3 Sex Ratio Differences in Washington State

There are ten significant differences in the Washington State data set. The DSE is significantly lower than the census sex ratios in the age group 0-9 in List/Enumerate areas. This effect is found again in the 'all persons' stratum. The E-sample has significant differences in List/Enumerate areas in three age groups: 10-19, 30-44, and 65+. These differences are significant for the E-sample in the 'all person' stratum for two of the three age groups: 30-44 and 65+. Finally, the P-sample has

significant differences in all three strata for the age group 30-44. The differences are negative, indicating that the census enumeration had more males than the P-sample.

Table 4.3 Significant Sex Ratio Differences by Stratum and Age Group for Washington

Stratum	0-9	10-19	20-29	30-44	45-64	65+	Total
List/Enumerate							
P	---	---	---	(-)	---	---	---
E	---	(-)	---	(-)	---	(+)	---
DSE	(-)	---	---	---	---	---	---
Not List/Enumerate							
P	---	---	---	(-)	---	---	---
E	---	---	---	---	---	---	---
DSE	---	---	---	---	---	---	---
All Persons							
P	---	---	---	(-)	---	---	---
E	---	---	---	(-)	---	(+)	---
DSE	(-)	---	---	---	---	---	---

5. Conclusion

The age-sex ratios of the census, the E-sample, the P-sample and the dual system estimator were examined in this report. The analyses were performed by dress rehearsal test site and post-stratum. As an evaluation tool, sex ratios have limited application because subgroups in the population may have sex ratios that deviate considerably from expected values. However, as a general indicator of the quality of the data, the sex ratios can point to unexpected extremities in the age-sex distribution. When the results of this report are compared with the sex ratios for the U.S. total population, deviations from expectations can be seen. For example, the census enumerations in the 'all persons' stratum in St. Louis, follow a pattern similar to that of the 1980 black national

population with sex ratios higher than 100 for the first age group and then tapering off with increasing age. The sex ratios in East Central Missouri show conformity with the white national population for ages past 30. For the age groups 10-19 and 20-29, both the census and the dual system estimates are lower than expected, i.e., point to a population with fewer males. Finally, in Washington State, the dual system estimator produces a sex ratio for the age group 20-29 that is much more male than both the national average and the census enumerations. (The sex ratios for the U.S. population by race are shown in Table 7).

Differences between the sex ratios in the four different data sources were also examined. In particular, it was of interest to notice the deviations of the E-, P- and the DSE results from the original enumeration. Such differences may reflect large sampling errors, rather than differences in coverage. Thus, standard errors were computed and differences significant at the .05 level or better were emphasized in the discussion. In St. Louis, there were eleven significant differences. Only four significant differences emerged in East Central Missouri. Finally, in Washington State, there were ten significant differences.

The significant differences within each site were also examined by data source. There were six significant differences between the P-sample and the census. All differences were negative, indicating that the P-sample had lower sex ratios than the census, i.e., that it produced fewer males. The E-sample had eight significant differences when comparisons were made with the census. In St. Louis, the E-sample difference was positive, i.e., more male than the census. In E.C. Missouri, on the other hand, the effect was that of less male in the E-sample than in the census. In Washington State, there were five significant E-sample differences, some positive and some negative, suggesting biases in the sample selection.

Finally, focusing on the differences between the DSE and the census, there were ten significant differences across the three sites. In one test site, St. Louis, one of the significant differences was negative, and six of these differences were positive, suggesting that the DSE produced several sex ratios that were larger than the census and not within sampling error. In the other two test sites, there were one and two significant DSE-census differences, respectively. All three differences had negative signs.

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the estimation. For a more detailed description of this program reference can be made to Robert E. Fay, "VPLX, Variance Estimates for Complex Samples." This paper was presented at the Joint Annual Meetings of the American Statistical Association on August 6-9, 1990 in Anaheim, California.

Table 1. Sex Ratios by Data Source, Age and Stratum - St. Louis

Age	Census	E-sample	P-sample	DSE
White Non-Hispanic Renters:				
Total	80.42	84.16	85.99	83.27
0-9	102.64	91.67	89.09	107.75
10-19	84.55	88.39	106.43	72.04
20-29	92.52	97.19	88.53	90.87
30-44	106.49	92.46	94.79	124.00
45-64	82.46	80.49	84.16	89.13
65+	34.51	45.79	51.13	33.41
White Non-Hispanic Owners:				
Total	89.46	86.10	79.97	90.28
0-9	108.20	105.56	91.47	90.28
10-19	105.65	91.41	76.39	110.10
20-29	105.44	102.33	87.68	103.65
30-44	106.91	117.22	107.98	107.85
45-64	84.86	82.13	82.56	86.28
65+	60.86	55.18	54.67	60.98
All Other Renters:				
Total	75.78	78.57	79.63	82.18
0-9	100.75	121.98	110.29	92.00
10-19	96.89	86.46	95.39	105.69
20-29	68.88	63.27	70.52	81.49
30-44	63.80	60.49	69.23	74.45
45-64	64.43	65.40	56.16	72.08
65+	46.91	58.59	51.27	51.11

Table 1 cont.

All Other Owners:

Total	86.59	86.14	86.86	88.15
0-9	99.22	86.82	99.02	92.19
10-19	102.58	97.59	90.67	103.27
20-29	102.78	113.74	113.18	106.46
30-44	88.25	86.81	91.74	90.75
45-64	71.30	75.67	72.49	74.50
65+	70.16	68.91	71.88	69.29

All Persons In St. Louis:

Total	82.83	83.31	82.35	85.79
0-9	102.43	106.45	100.43	97.92
10-19	98.27	89.98	91.37	100.23
20-29	88.98	87.59	84.73	92.67
30-44	89.99	86.24	89.39	97.49
45-64	76.53	76.89	74.85	80.43
65+	52.83	56.73	56.66	52.82

Table 2. Sex Ratios by Data Source, Age and Stratum - East Central Missouri

Age	Census	E-sample	P-sample	DSE
White non-Hispanic (TAR):				
Total	90.71	78.78	87.43	95.65
0-9	105.87	85.53	78.85	109.73
10-19	83.64	77.52	93.45	84.66
20-29	95.08	71.17	80.02	98.33
30-44	95.84	84.98	104.42	112.10
45-64	87.31	89.60	93.02	88.39
65+	64.19	72.92	73.77	65.22
White non-Hispanic (not in TAR):				
Total	96.39	93.75	95.40	97.23
0-9	107.25	99.87	104.81	111.66
10-19	106.20	106.59	104.66	106.29
20-29	96.38	94.26	97.39	95.24
30-44	98.71	92.60	95.43	97.85
45-64	95.87	96.60	94.08	98.12
65+	74.32	71.38	76.98	73.58
All Other Persons:				
Total	93.06	76.86	87.55	95.04
0-9	103.68	104.81	72.57	95.51
10-19	97.13	66.52	81.03	83.77
20-29	91.82	75.24	112.56	94.74
30-44	93.26	81.08	83.37	112.42
45-64	82.14	97.85	107.66	91.77
65+	70.21	33.59	57.51	68.60

Table 2 cont.

All Persons in East Central Missouri:

Total	93.35	90.61	94.16	96.86
0-9	106.81	98.73	100.67	109.97
10-19	101.77	98.55	102.18	100.53
20-29	95.68	85.85	94.07	96.02
30-44	97.97	91.10	95.83	100.66
45-64	94.44	95.93	94.35	96.98
65+	73.23	70.64	76.32	72.65

Table 3. Sex Ratios by Data Source, Age and Stratum - Washington State

Age	Census	E-sample	P-sample	DSE
Persons in List/Enumerate Areas:				
Total	102.8	104.6	97.2	101.0
0-9	106.5	120.5	122.6	89.9
10-19	110.6	95.1	81.4	117.2
20-29	101.1	132.3	91.7	96.3
30-44	105.8	94.3	91.9	107.4
45-64	101.8	91.5	110.0	111.5
65+	88.8	121.7	86.8	84.6
Persons not in List/Enumerate Areas:				
Total	99.9	102.1	97.1	103.7
0-9	106.6	106.2	106.3	102.5
10-19	102.4	127.5	107.3	100.8
20-29	112.4	120.4	141.1	135.2
30-44	99.8	87.4	75.8	102.4
45-64	93.2	103.3	96.7	89.2
65+	76.8	81.9	78.8	76.0
All Persons in Washington State:				
Total	101.3	103.5	97.2	102.2
0-9	106.5	114.8	115.7	95.5
10-19	106.3	105.8	88.5	108.2
20-29	108.2	126.0	112.8	119.6
30-44	102.9	91.3	85.3	105.1
45-64	97.9	95.9	105.0	101.7
65+	83.3	101.8	83.0	80.7

Table 4. Sex Ratio Differences - St. Louis

Age	E-sample -Census	(s.e.)	P-sample -Census	(s.e.)	DSE -Census	(s.e.)
White non-Hispanic Renters:						
Total	+ 3.74	(5.77)	+ 5.57	(6.36)	+ 2.85	(2.96)
0-9	-10.97	(17.85)	-13.55	(16.54)	+ 5.11	(8.42)
10-19	+ 3.84	(17.31)	-21.88	(27.60)	-12.51	(8.92)
20-29	+ 4.67	(10.23)	- 3.99	(10.98)	- 1.65	(6.67)
30-44	-14.03	(10.57)	-11.71	(13.87)	+17.51*	(7.52)
45-64	- 1.97	(10.21)	+ 1.70	(8.33)	+ 6.67	(4.67)
65+	+11.28	(12.87)	+16.62	(14.15)	- 1.10	(1.76)
White non-Hispanic Owners:						
Total	- 3.36	(3.61)	- 9.49*	(3.51)	+ .82	(.90)
0-9	- 2.64	(20.10)	-16.73	(17.59)	+ 1.90	(5.16)
10-19	-14.24	(13.82)	-29.26*	(9.85)	+ 1.14	(3.80)
20-29	- 3.31	(10.45)	-17.76*	(7.40)	- 1.79	(3.74)
30-44	+10.31	(6.91)	- 1.07	(6.94)	+ .94	(1.60)
45-64	- 2.73	(7.34)	- 2.30	(6.77)	+ 1.42	(1.52)
65+	- 5.68	(4.16)	- 6.19	(4.86)	+ .12	(.56)
All Other Renters:						
Total	+ 2.79	(5.14)	+ 3.85	(7.13)	+ 6.40*	(2.05)
0-9	+21.23*	(10.48)	+ 9.54	(8.41)	- 8.75*	(4.05)
10-19	-10.43	(6.71)	- 1.50	(13.02)	+ 8.80	(5.08)
20-29	- 5.61	(5.99)	+ 1.64	(12.38)	+12.61	(7.40)
30-44	+ 3.31	(12.79)	+ 5.43	(18.38)	+10.65*	(5.07)
45-64	+ .97	(10.59)	- 8.27	(6.32)	+ 7.65	(4.28)
65+	+11.68	(14.58)	+ 4.36	(7.61)	+ 4.20	(3.08)

Table 4 cont.

All Other Owners:

Total	- .45	(2.40)	+ .27	(2.28)	+ 1.56	(1.86)
0-9	-12.40	(9.33)	- .20	(8.35)	- 7.03	(6.12)
10-19	- 4.99	(10.83)	-12.11	(8.91)	+ .69	(3.53)
20-29	+10.96	(8.80)	+10.40	(12.41)	+ 3.68	(8.07)
30-44	- 1.44	(6.11)	+ 3.49	(6.75)	+ 2.50	(3.12)
45-64	+ 4.37	(3.91)	+ 1.19	(3.77)	+ 3.20	(2.33)
65+	- 1.25	(5.33)	+ 1.72	(5.66)	+ .87	(1.74)

All Persons in St. Louis:

Total	+ .48	(2.27)	+ .48	(3.24)	+ 2.96	(1.13)
0-9	+ 4.02	(7.62)	- 2.00	(6.80)	- 4.51*	(2.70)
10-19	- 8.29	(5.67)	- 6.90	(7.12)	+ 1.96	(2.53)
20-29	- 1.39	(4.51)	- 4.25	(6.38)	+ 3.69	(4.16)
30-44	- 3.75	(5.81)	- .60	(7.00)	+ 7.50*	(2.56)
45-64	+ .36	(3.45)	- 1.68	(3.12)	+ 3.90*	(1.61)
65+	+ 3.83	(4.37)	+ 3.90	(3.82)	+ .01	(.92)

Table 5. Sex Ratio Differences - East Central Missouri

Age	E-sample -Census	(s.e.)	P-sample -Census	(s.e.)	DSE -Census	(s.e.)
White non-Hispanic (TAR):						
Total	-11.93*	(5.69)	- 3.28	(6.37)	+ 4.94*	(2.61)
0-9	-20.34	(11.50	-27.02*	(11.93)	+ 3.86	(5.34)
10-19	- 6.12	(14.31)	- 9.81	(17.15)	+ 1.02	(8.16)
20-29	-23.91	(10.85)	-15.06	(9.58)	+ 3.25	(6.08)
30-44	-10.86	(7.90)	+ 8.58	(17.19)	+16.26	(14.14)
45-64	+ 2.29	(5.94)	+ 5.71	(10.76)	+ 1.08	(3.52)
65+	+ 9.58	(6.30)	+ 8.73	(6.96)	+ 1.03	(1.26)
White non-Hispanic (not in TAR):						
Total	- 2.64	(2.11)	- .99	(3.68)	+ .84	(1.25)
0-9	- 7.38	(5.17)	- 2.44	(12.30)	- 4.41	(7.48)
10-19	+ .39	(8.62)	- 1.54	(10.02)	+ .09	(2.43)
20-29	- 2.12	(5.41)	+ 1.01	(6.40)	+ 1.14	(2.26)
30-44	- 6.11	(4.76)	- 3.28	(4.29)	+ .86	(2.67)
45-64	+ .73	(4.70)	- 1.79	(4.69)	+ .25	(2.87)
65+	- 2.94	(5.30)	+ 2.66	(8.59)	+ .76	(.82)
All Other Persons:						
Total	-16.20	(26.24)	- 5.51	(9.68)	+ 1.98	(4.70)
0-9	+ 1.13	(23.78)	-31.11	(17.73)	- 8.17	(17.26)
10-19	-30.61	(92.47)	-16.10	(20.98)	-13.36*	(5.80)
20-29	-16.62	(28.93)	+20.74	(34.70)	+ 2.92	(11.83)
30-44	-12.18	(15.81)	- 9.89	(17.41)	+19.16	(17.82)
45-64	+15.71	(18.10)	+25.52	(29.91)	+ 9.63	(14.29)
65+	-36.62	(7.97)	-12.70	(19.24)	+ 1.61	(1.66)

Table 5 cont.

All Persons in East Central Missouri:

Total	-	4.74*	(2.39)	-	1.19	(3.28)	+ 1.51	(1.11)
0-9	-	8.08	(4.75)	-	6.14	(10.46)	+ 3.16	(6.24)
10-19	-	3.22	(10.43)	-	.41	(8.96)	- 1.24	(2.37)
20-29	-	9.83	(5.23)	-	1.61	(5.93)	+ .34	(2.69)
30-44	-	6.87	(4.36)	-	2.14	(4.47)	+ 2.69	(3.58)
45-64	+	1.49	(4.14)	-	.09	(4.16)	+ 2.54	(2.57)
65+	-	2.59	(4.67)	+	3.09	(7.70)	+ .58	(.74)

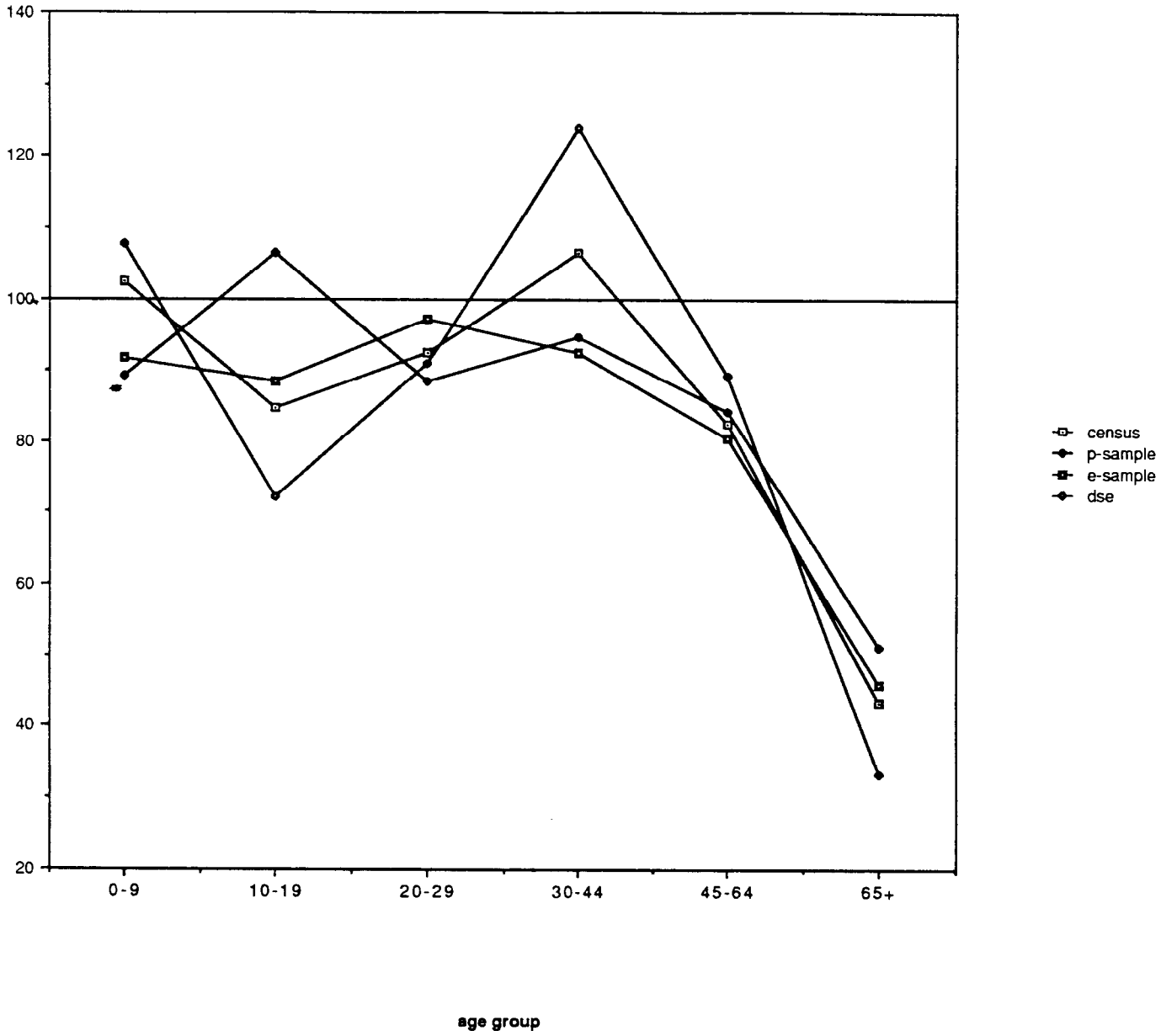
Table 6. Sex Ratio Differences - Washington State

Age	E-sample -Census	(s.e)	P-sample -Census	(s.e.)	DSE -Census	(s.e.)
Persons in List/Enumerate Areas:						
Total	+ 1.77	(5.74)	- 5.60	(10.46)	- 1.80	(2.28)
0-9	+13.50	(21.68)	+16.10	(29.05)	-16.00*	(6.10)
10-19	-15.50*	(7.09)	-29.20	(25.74)	+ 6.60	(12.98)
20-29	-31.20	(19.60)	- 9.40	(24.48)	- 4.80	(13.98)
30-44	-11.50*	(5.62)	-13.90*	(5.87)	+ 1.60	(3.39)
45-64	-10.30	(5.63)	+ 8.20	(12.64)	+ 9.70	(8.90)
65+	+32.90*	(13.42)	- 2.00	(22.29)	- 4.20	(4.73)
Persons not in List/Enumerate Areas:						
Total	+ 2.16	(7.62)	- 2.80	(7.62)	+ 3.47	(4.02)
0-9	- .40	(23.46)	- .30	(15.06)	- 4.10	(4.68)
10-19	+25.10	(21.57)	+ 4.90	(22.18)	- 1.60	(4.61)
20-29	- 8.00	(24.31)	+28.70	(30.51)	+22.80	(15.54)
30-44	-12.40	(11.38)	-24.00*	(11.58)	+ 2.60	(5.40)
45-64	+10.10	(9.82)	+ 3.50	(9.80)	+ 4.00	(2.77)
65+	+ 5.10	(7.92)	- 2.00	(6.88)	- .80	(2.04)
All Persons in Washington State:						
Total	+ 2.16	(4.46)	- 4.20	(6.78)	+ .81	(2.29)
0-9	+ 8.30	(15.79)	+ 9.20	(17.59)	-11.00*	(4.02)
10-19	- .50	(9.51)	-17.80	(19.70)	+ 1.90	(6.32)
20-29	+17.80	(15.06)	+ 4.60	(19.60)	+11.40	(11.19)
30-44	-11.60*	(5.80)	-17.60*	(5.55)	+ 2.20	(3.08)
45-64	- 2.00	(5.29)	+ 7.10	(8.76)	+ 3.80	(4.96)
65+	+18.50*	(6.96)	- .30	(10.07)	- 2.60	(2.67)

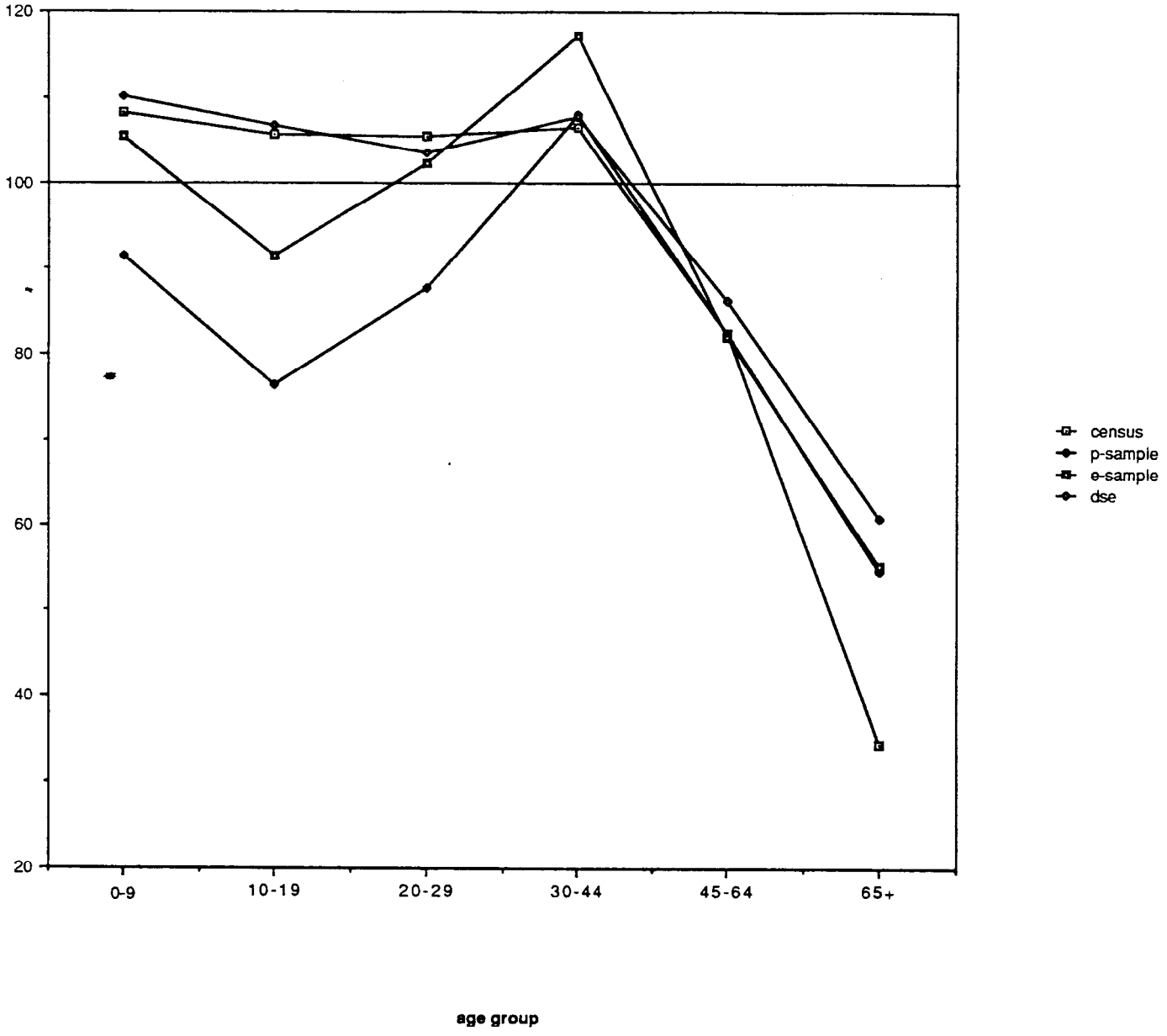
Table 7. Sex Ratios - 1980 Resident U.S. Population

Age	White	Black
0-9	105.30	101.62
10-19	104.36	100.32
20-29	101.16	89.75
30-44	98.68	84.17
45-64	91.82	81.04
65+	67.28	68.25

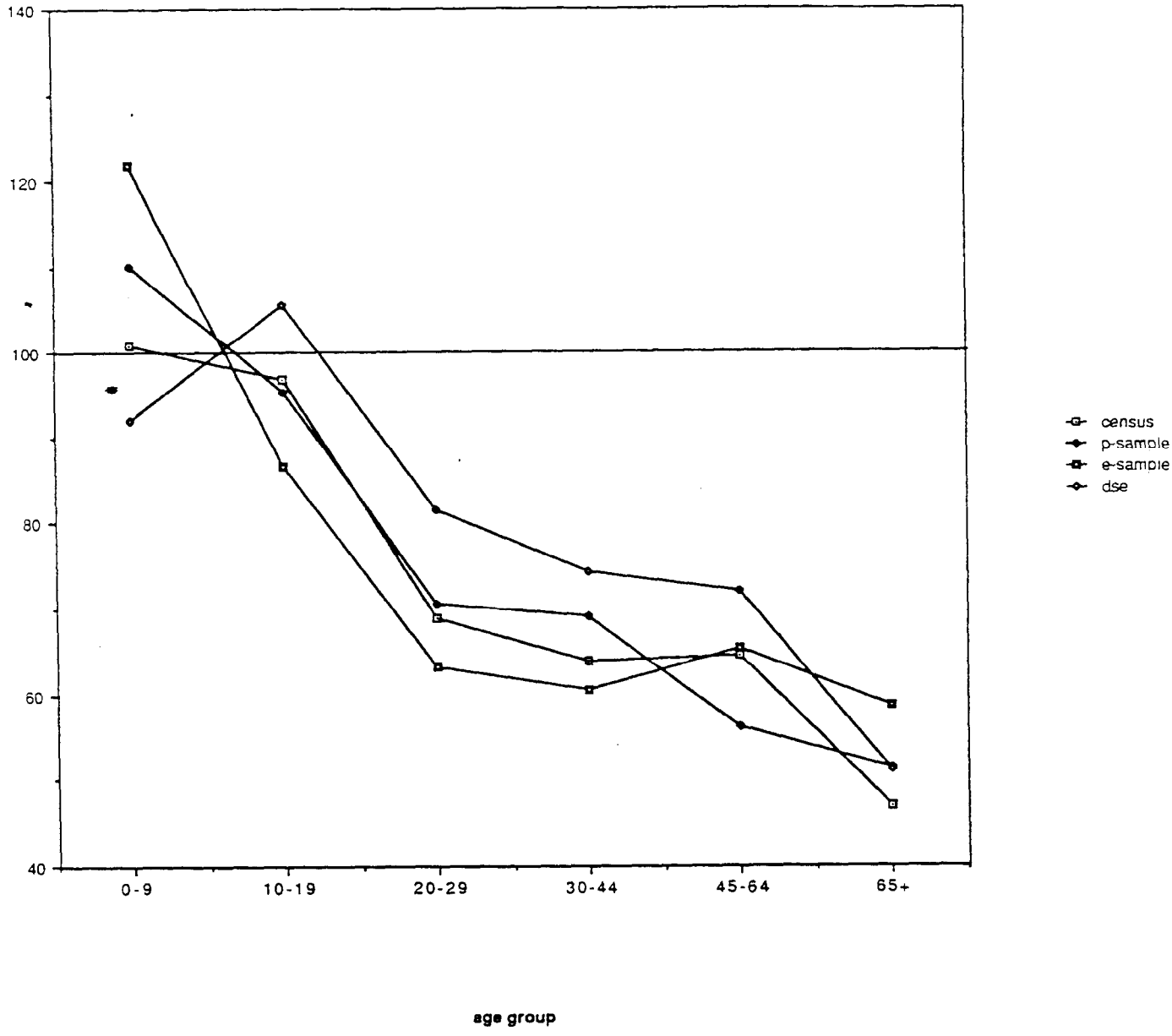
Graph 1. Sex Ratios. White non-Hispanic Renters - St. Louis



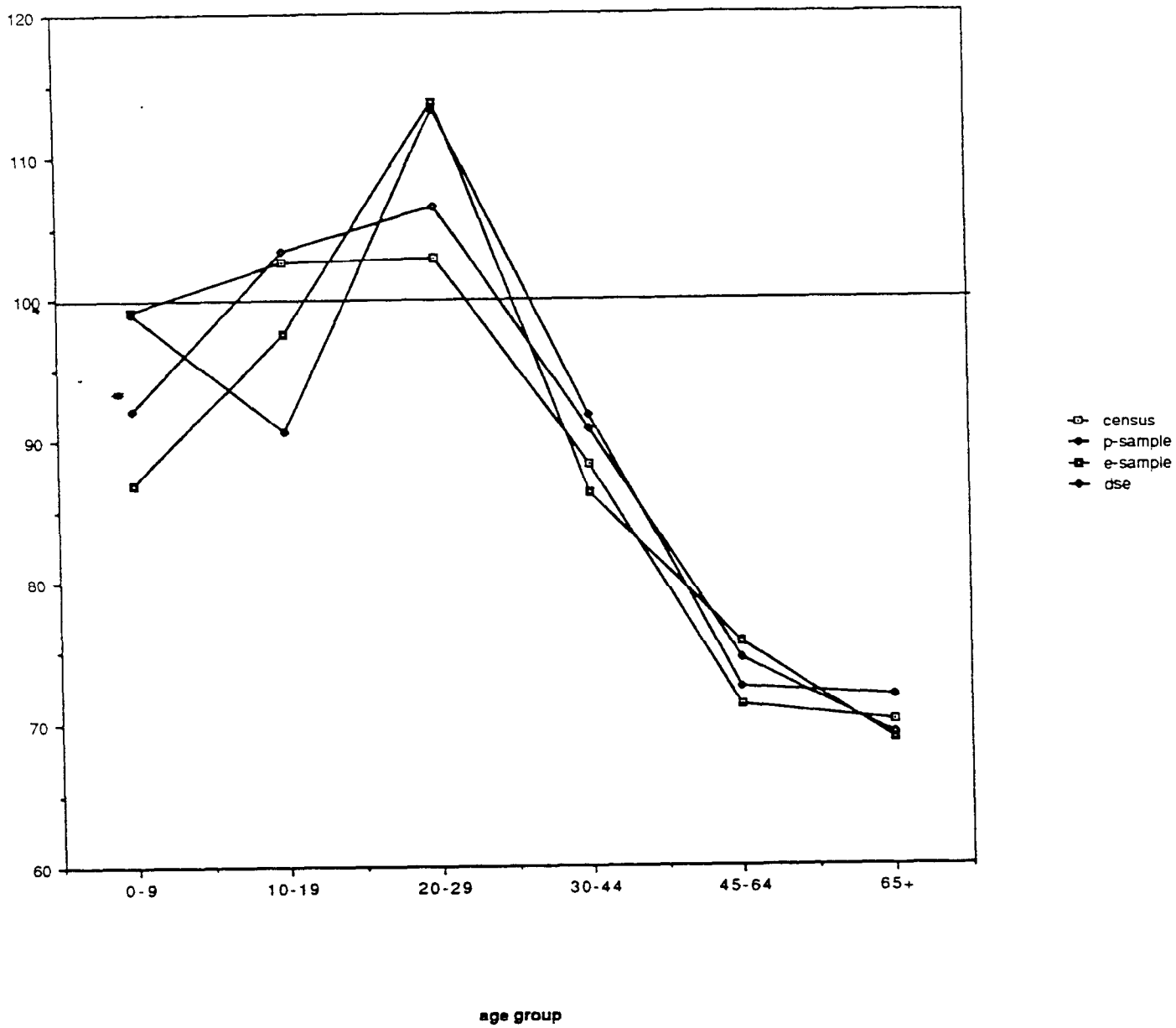
Graph 2. Sex Ratios. White non-Hispanic Owners - St. Louis



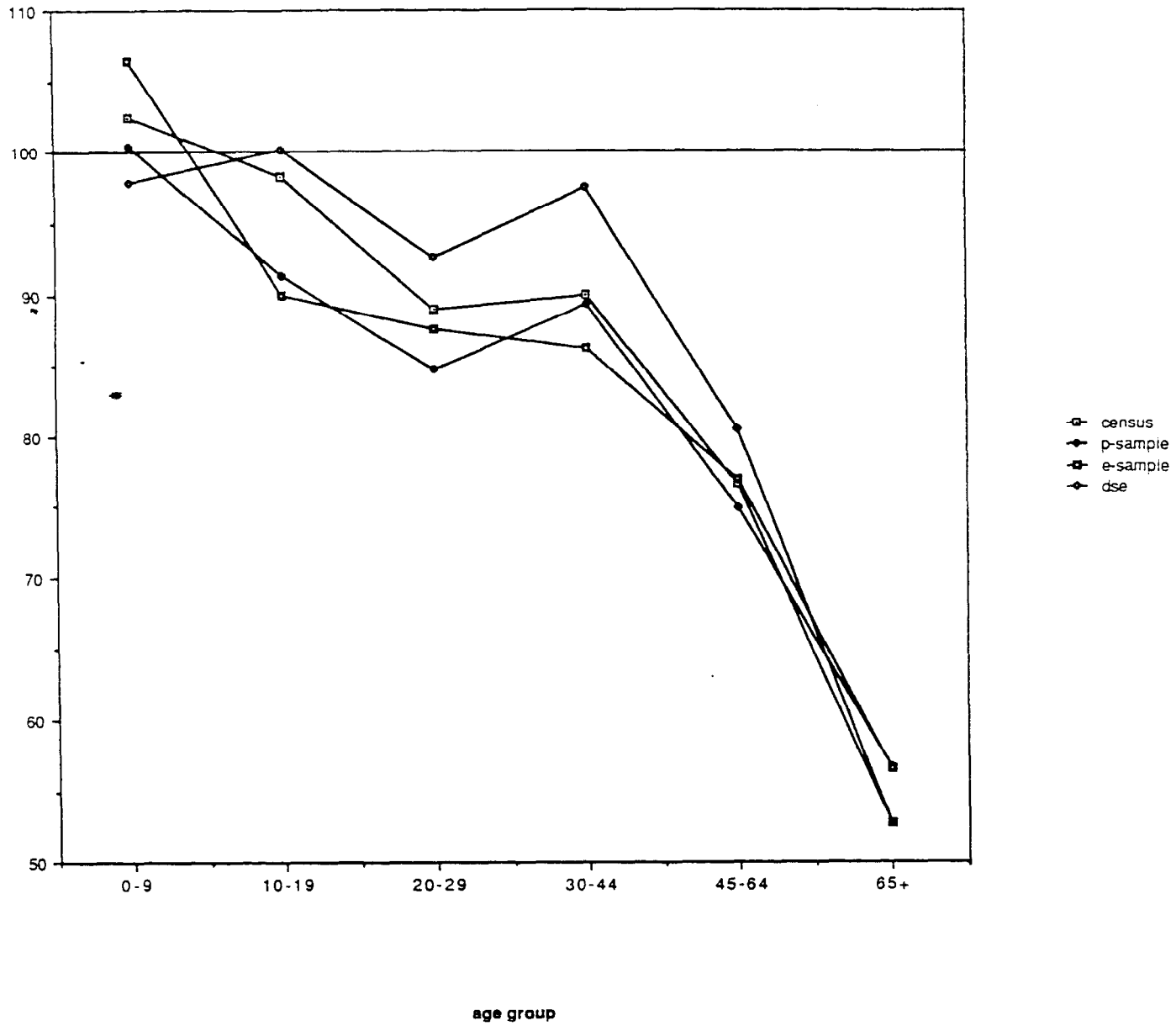
Graph 3. Sex Ratios. All Other Renters - St. Louis



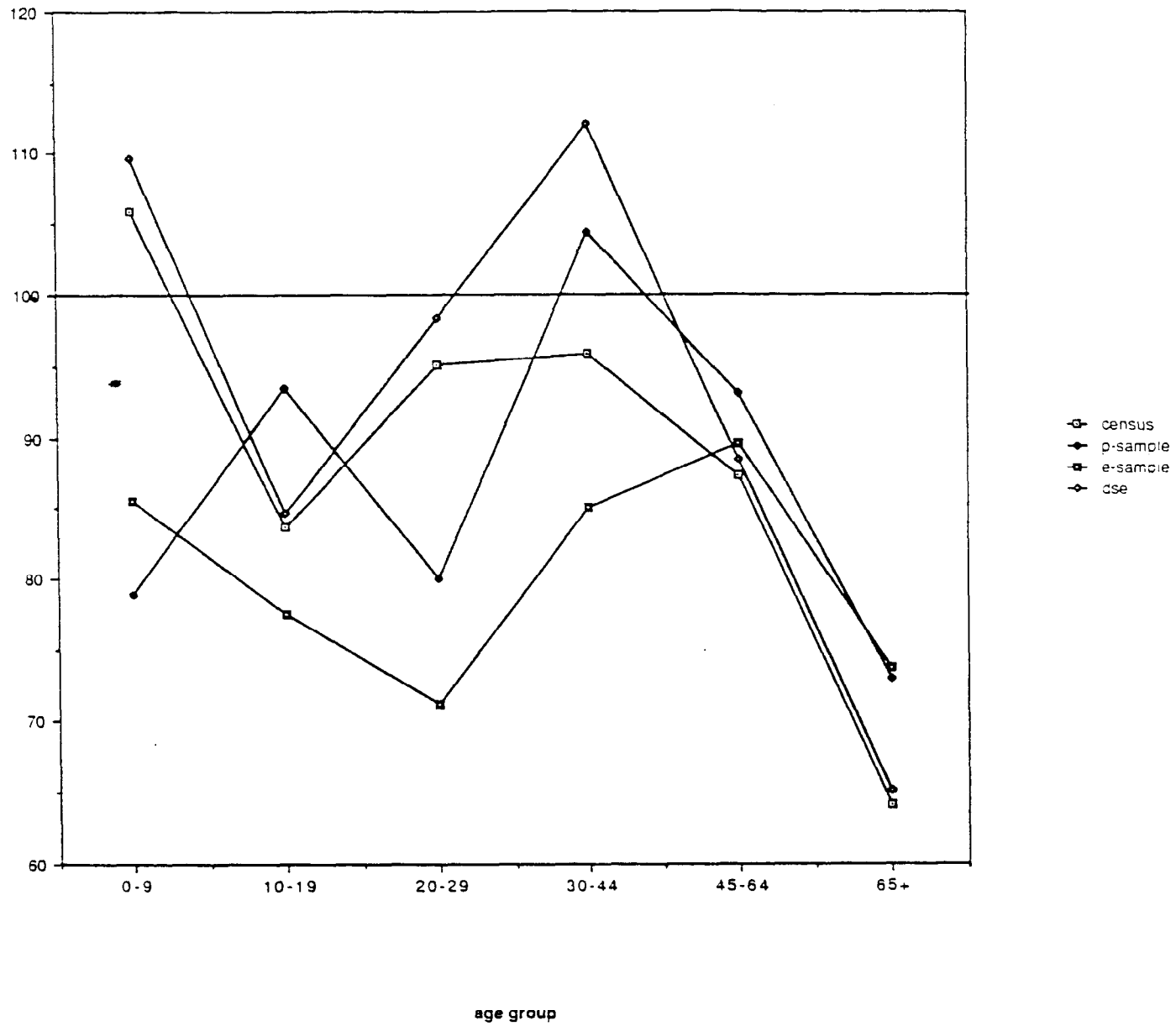
Graph 4. Sex Ratios. All Other Owners - St.Louis



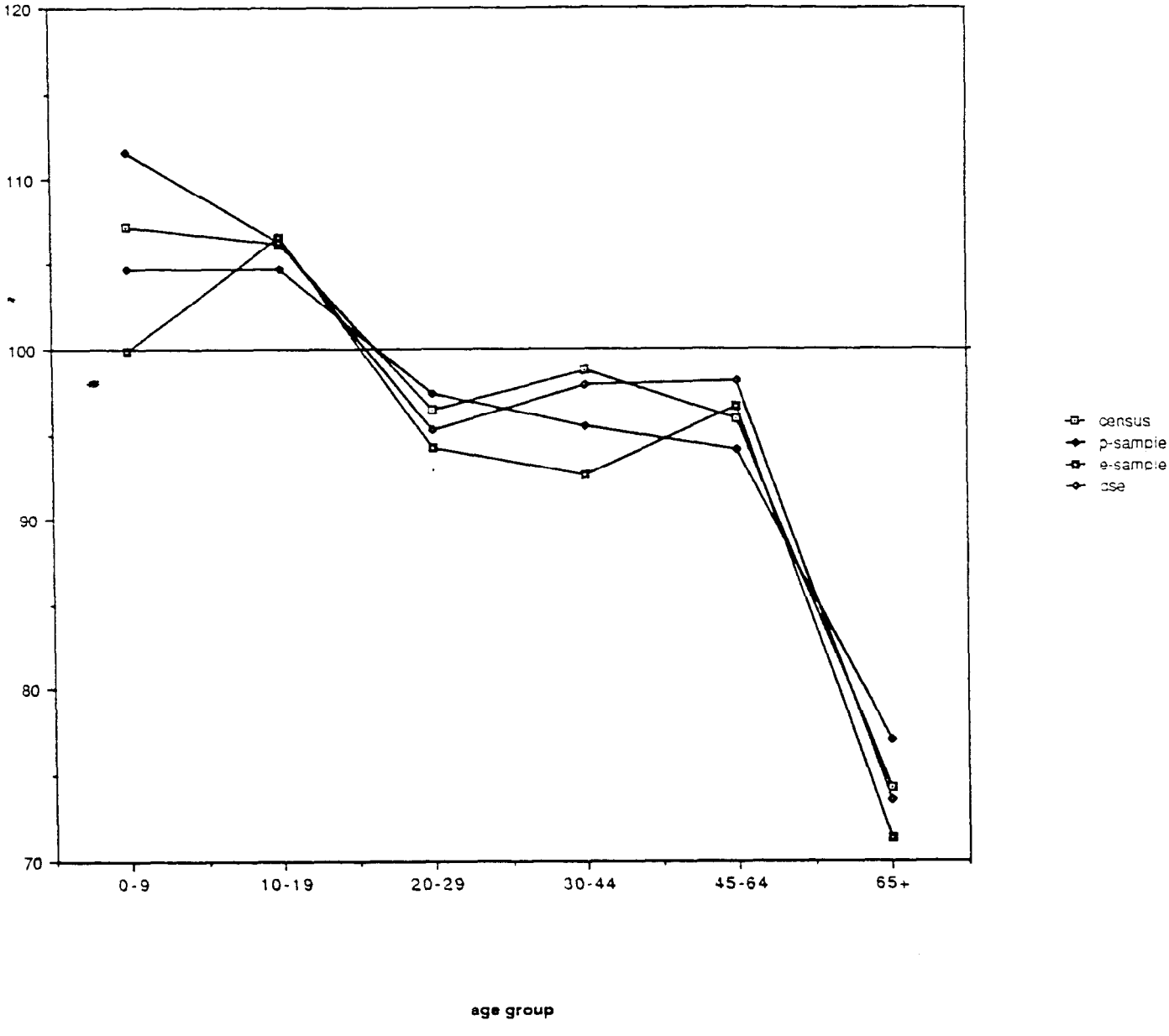
Graph 5. Sex Ratios. All Persons In St. Louis



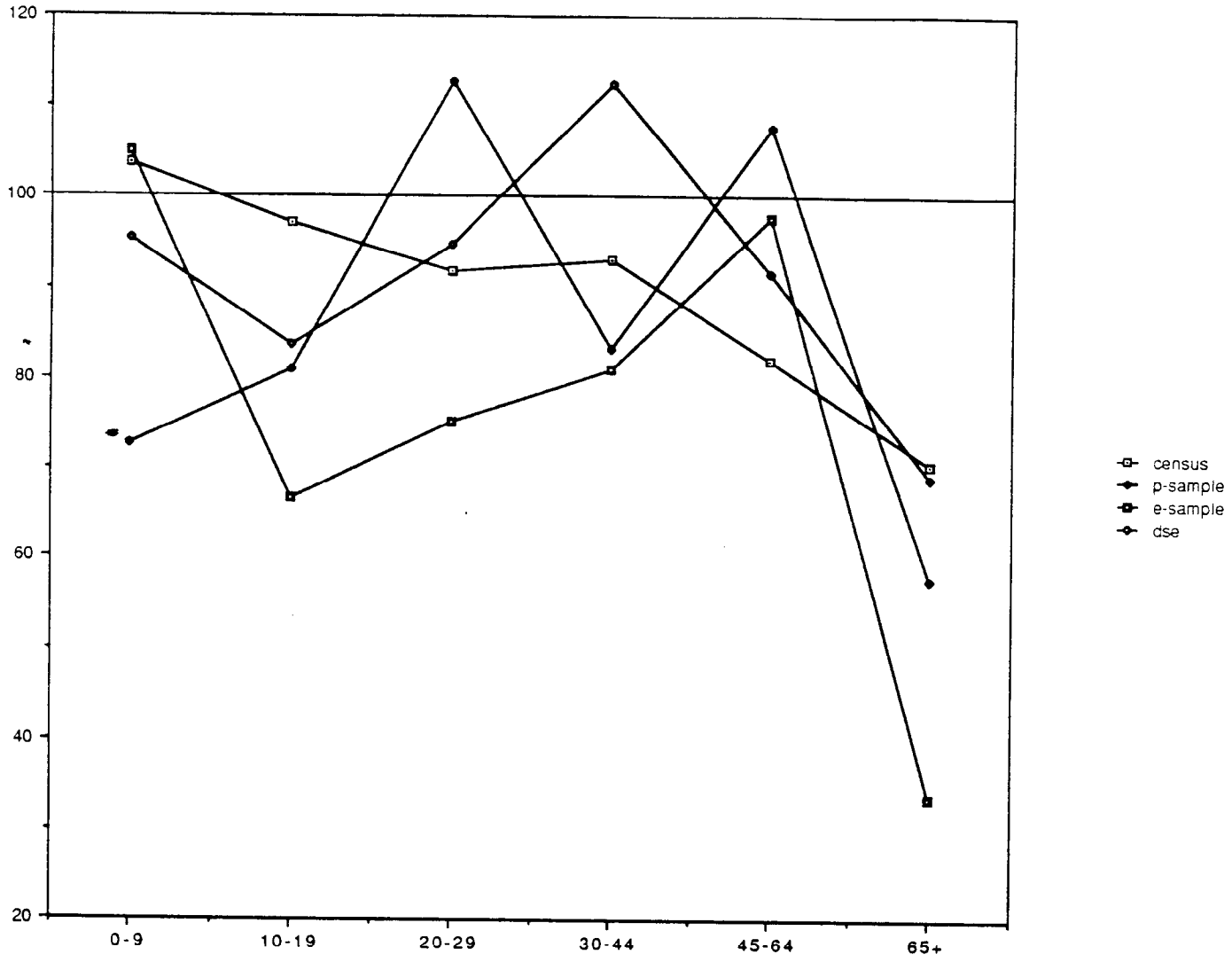
Graph 6. Sex Ratios. White non-Hispanic (TAR) - Columbia



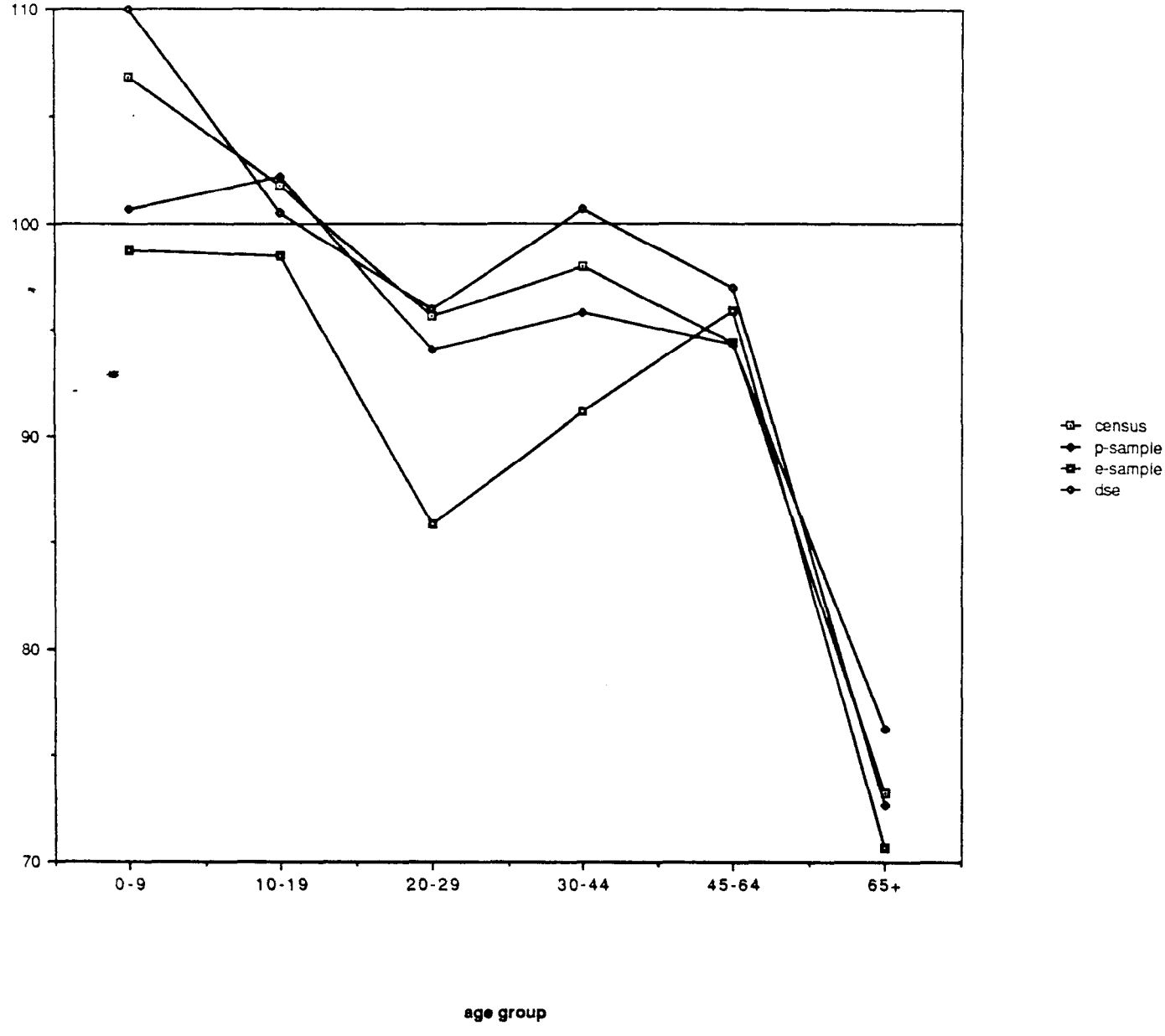
Graph 7. Sex Ratios. White non-Hispanic (not in TAR) - Columbia



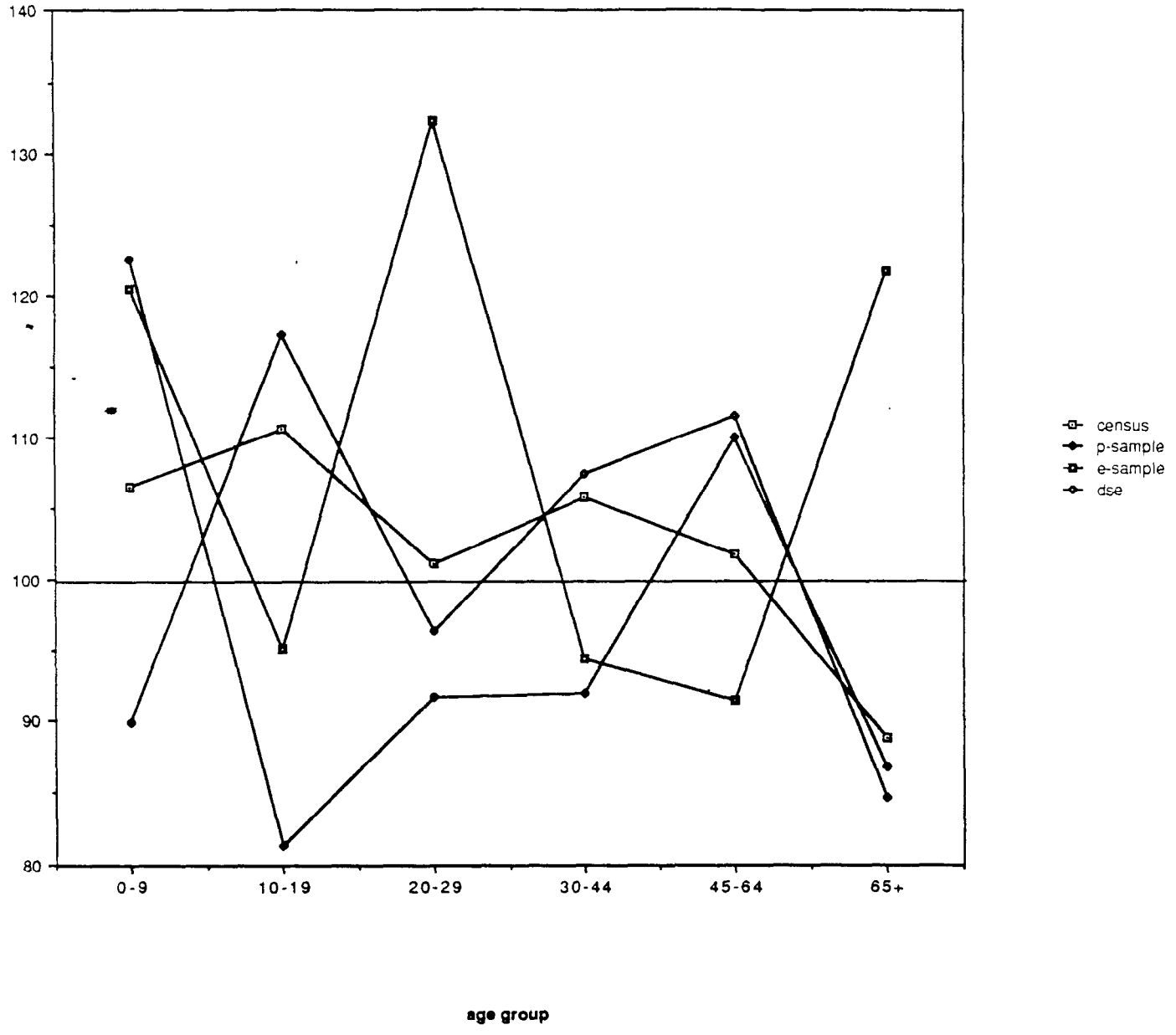
Graph 8. Sex Ratios. All Other Persons - Columbia



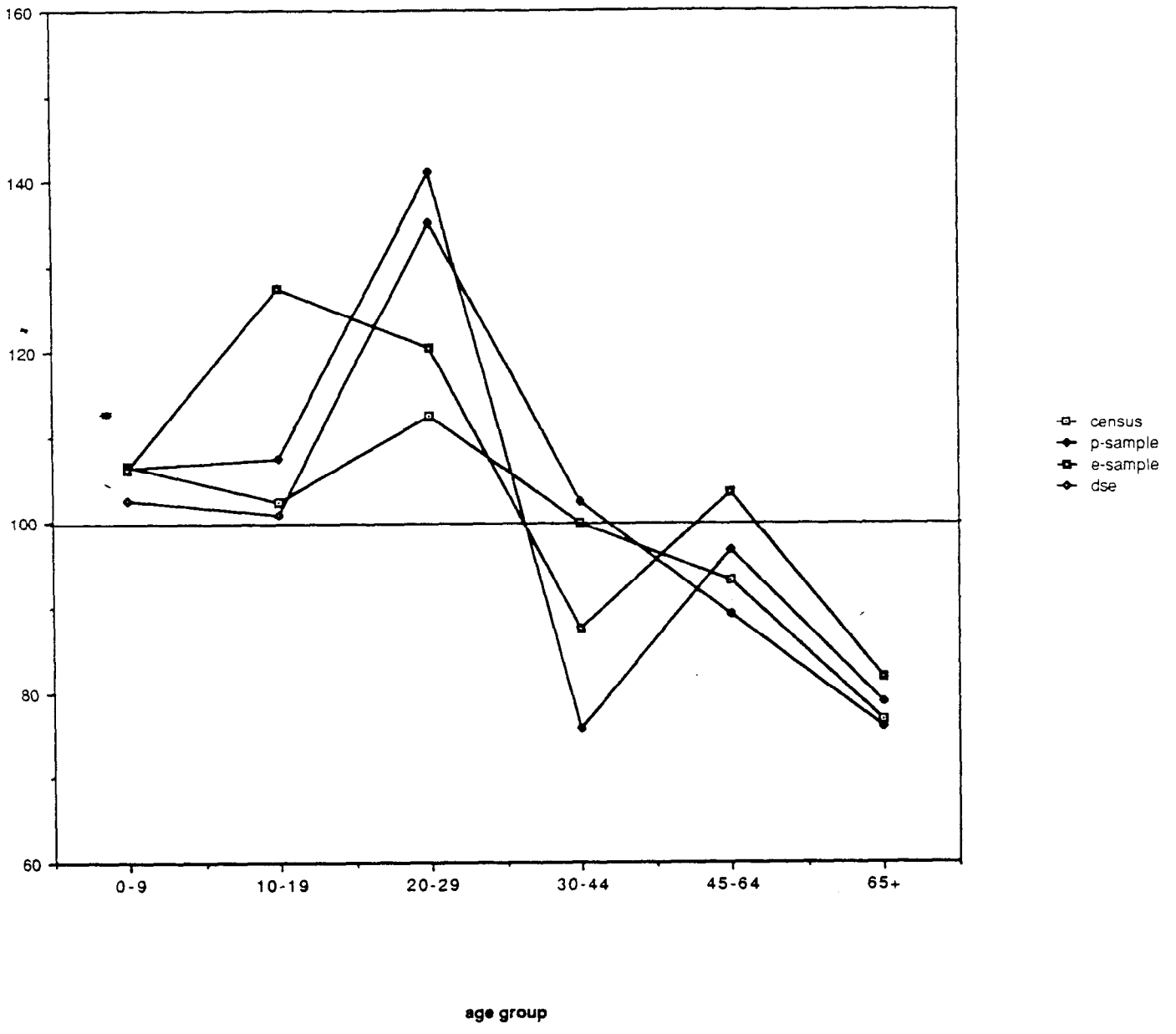
Graph 9. Sex Ratios. All Persons in Columbia



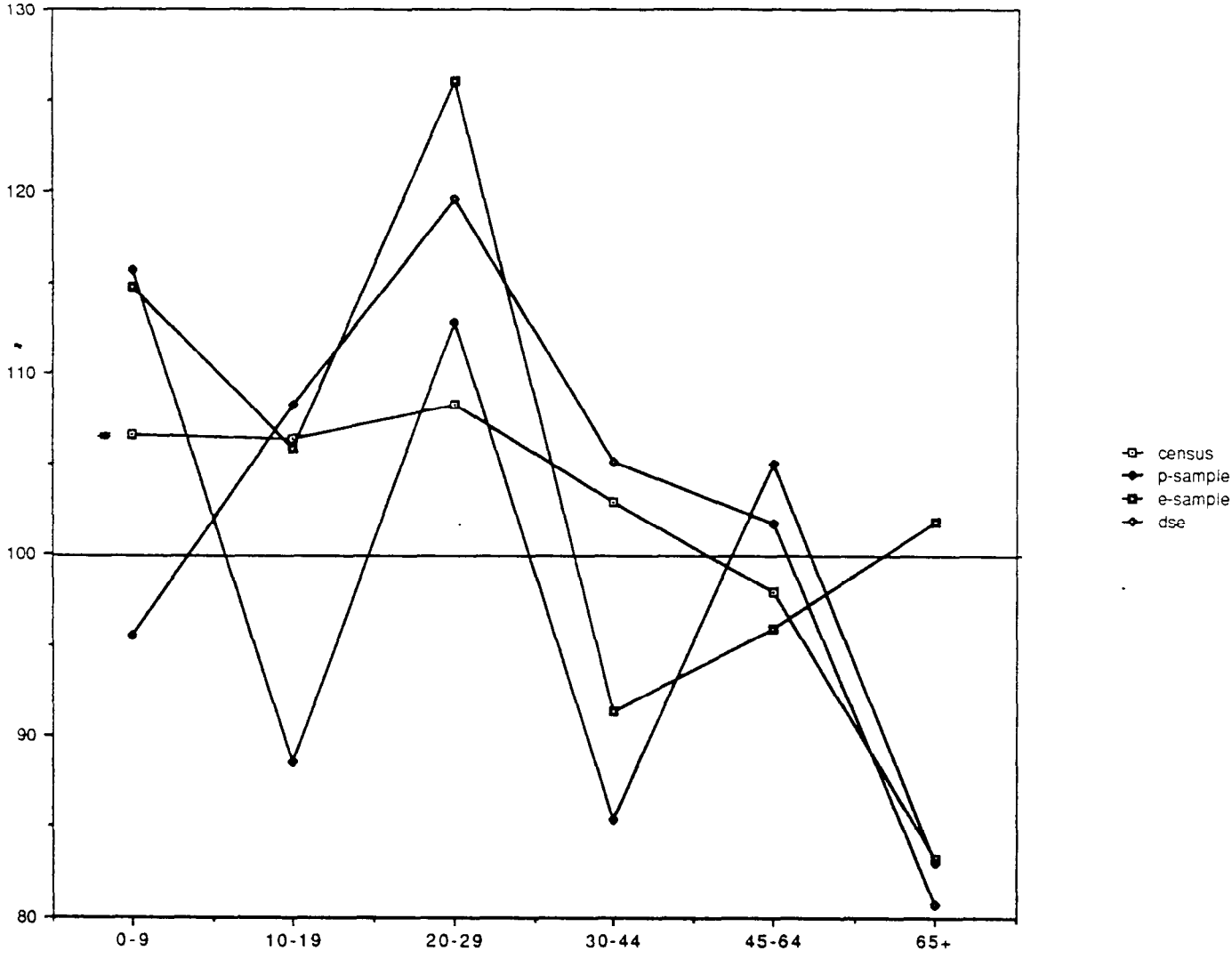
Graph 10. Sex Ratios. Persons in L/E - Washington State



Graph 11. Sex Ratios. Persons not in L/E - Washington State



Graph 12. Sex Ratios. All Persons in Washington State



Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In The City Of Saint Louis, Missouri

Table 1 White Nonhispanic Nonowners In Saint Louis, Missouri

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	5334	6203	5104	5536
10-19	3271	3691	3822	3089
20-29	11566	9097	7664	12479
30-44	9977	9080	9093	11972
45-64	5364	6550	6173	5692
65+	4063	2887	2697	4105
Female				
0-9	5197	6767	5729	5138
10-19	3868	4176	3591	4288
20-29	12501	9360	8657	13733
30-44	9369	9820	9594	9655
45-64	6505	8138	7335	6386
65+	11773	6305	5275	12286

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In The City Of Saint Louis, Missouri

Table 2 White Nonhispanic Owners In Saint Louis, Missouri

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	7008	6344	5432	7217
10-19	5797	5446	4648	5948
20-29	7517	7809	6213	7291
30-44	13297	12187	10791	13319
45-64	11667	11765	11261	11309
65+	10172	9617	9033	10000
Female				
0-9	6477	6010	5946	6555
10-19	5487	5958	6100	5570
20-29	7127	7631	7092	7034
30-44	12437	10397	10003	12350
45-64	13749	14325	13684	13108
65+	16713	17429	16563	16398

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In The City Of Saint Louis, Missouri

Table 3 All Other Nonowners In Saint Louis, Missouri

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	12892	16682	14181	14530
10-19	10324	11396	10868	12154
20-29	8385	8857	9101	10793
30-44	8560	9102	8860	10598
45-64	5238	5247	4576	5889
65+	3377	3093	2380	3676
Female				
0-9	12796	13676	12861	15793
10-19	10655	13181	11393	11500
20-29	12173	13998	12906	13245
30-44	12416	15047	12797	14235
45-64	8130	8023	8148	8170
65+	7199	5279	4642	7193

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In The City Of Saint Louis, Missouri

Table 4 All Other Owners In Saint Louis, Missouri

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	5245	4729	4341	5881
10-19	6475	5710	5247	7357
20-29	6180	6017	5127	7367
30-44	6892	6773	6410	7524
45-64	7467	7445	7067	8065
65+	5029	4754	4384	4923
Female				
0-9	5286	5447	5787	6379
10-19	6312	5851	4530	7124
20-29	6013	5290	4530	6920
30-44	7810	7802	6987	8291
45-64	10472	9838	9749	10825
65+	7168	6899	5907	7105

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In The City Of Saint Louis, Missouri

Table 5 All Persons In Saint Louis, Missouri

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	30479	33958	29269	33163
10-19	25867	26243	24830	28548
20-29	33648	31779	28283	37929
30-44	38736	37142	35380	43413
45-64	29736	31007	29268	30956
65+	22641	20350	18525	22704
Female				
0-9	29756	31900	29143	33866
10-19	26322	29166	27175	28483
20-29	37816	36279	33381	40931
30-44	43032	43066	39581	44531
45-64	38856	40324	39103	38489
65+	42853	35913	32657	42982

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In East Central Missouri

Table 6 White Nonhispanic Persons in Columbia, MO (The East Central Missouri Tape Address Register Area)

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	3682	2382	1763	3655
10-19	4411	2172	2167	5294
20-29	9398	6831	5332	11112
30-44	6319	4361	4295	7430
45-64	3688	3170	2918	3654
65+	1893	1822	1649	1875
Female				
0-9	3478	2785	2236	3331
10-19	5274	2802	2319	6253
20-29	9884	9598	6663	11301
30-44	6593	5132	4113	6628
45-64	4224	3538	3137	4134
65+	2949	2470	2260	2875

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In East Central Missouri

Table 7 White Nonhispanic Persons In The Remainder Of The East Central Missouri Test Site

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	27748	24167	24579	30546
10-19	25438	22784	22318	26114
20-29	24507	20410	20129	26128
30-44	37097	31606	31879	39089
45-64	32855	29829	29803	34496
65+	19721	15386	17403	19330
Female				
0-9	25872	24199	23472	27356
10-19	23953	21376	21323	24568
20-29	25427	21653	20669	27435
30-44	37581	34130	33404	39949
45-64	34272	30879	31680	35124
65+	26534	21554	22606	26270

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In East Central Missouri

Table 8 All Other Persons In The East Central Missouiri Test Site

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	2736	1589	1093	3001
10-19	2165	2345	1256	2127
20-29	2817	2914	1523	3368
30-44	2766	1624	1484	3476
45-64	1242	911	1091	1395
65+	535	215	222	5338
Female				
0-9	2639	1516	1644	3142
10-19	2229	3525	1550	2539
20-29	3068	3873	1353	3555
30-44	2966	2003	1780	3092
45-64	1512	931	1019	1520
65+	762	640	386	777

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In East Central Missouri

Table 9 All Persons In The East Central Missouri Test Site

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	34166	28138	27535	37201
10-19	32014	27301	25740	33535
20-29	36722	30155	26984	40608
30-44	46182	37591	37658	49995
45-64	37785	33910	33812	39545
65+	22149	17423	19273	21738
Female				
0-9	31989	28499	27353	33829
10-19	31456	27704	25192	33359
20-29	38379	35124	28685	42292
30-44	47140	41265	39297	49669
45-64	40008	35348	35836	40778
65+	30245	24663	25253	29923

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In Eastern Washington State

Table 10 Persons In The Eastern Washington Test Site, In List/Enumerate Areas

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	11434	15122	12907	11282
10-19	10136	12629	12604	10422
20-29	7841	9027	7620	8906
30-44	15138	15891	15917	16809
45-64	12850	15552	17045	15121
65+	8222	9381	7230	7885
Female				
0-9	10737	12551	10524	12554
10-19	9161	13285	15482	8896
20-29	7752	6825	8307	9245
30-44	14305	16845	17316	15656
45-64	12622	17004	15489	13558
65+	9262	7711	8331	9321

Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In Eastern Washington State

Table 11 Persons In The Eastern Washington Test Site, Not In List/Enumerate Areas

Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	9898	8653	8350	10342
10-19	10564	8430	6283	10893
20-29	14402	9140	8715	18617
30-44	13250	11923	9218	13915
45-64	9563	10656	9186	9529
65+	5963	6306	5980	5926
Female				
0-9	9284	8150	7855	10087
10-19	10318	6613	5854	10807
20-29	12812	7592	6177	13775
30-44	13274	13635	12165	13589
45-64	10265	10313	9495	10684
65+	7747	7698	7593	7793

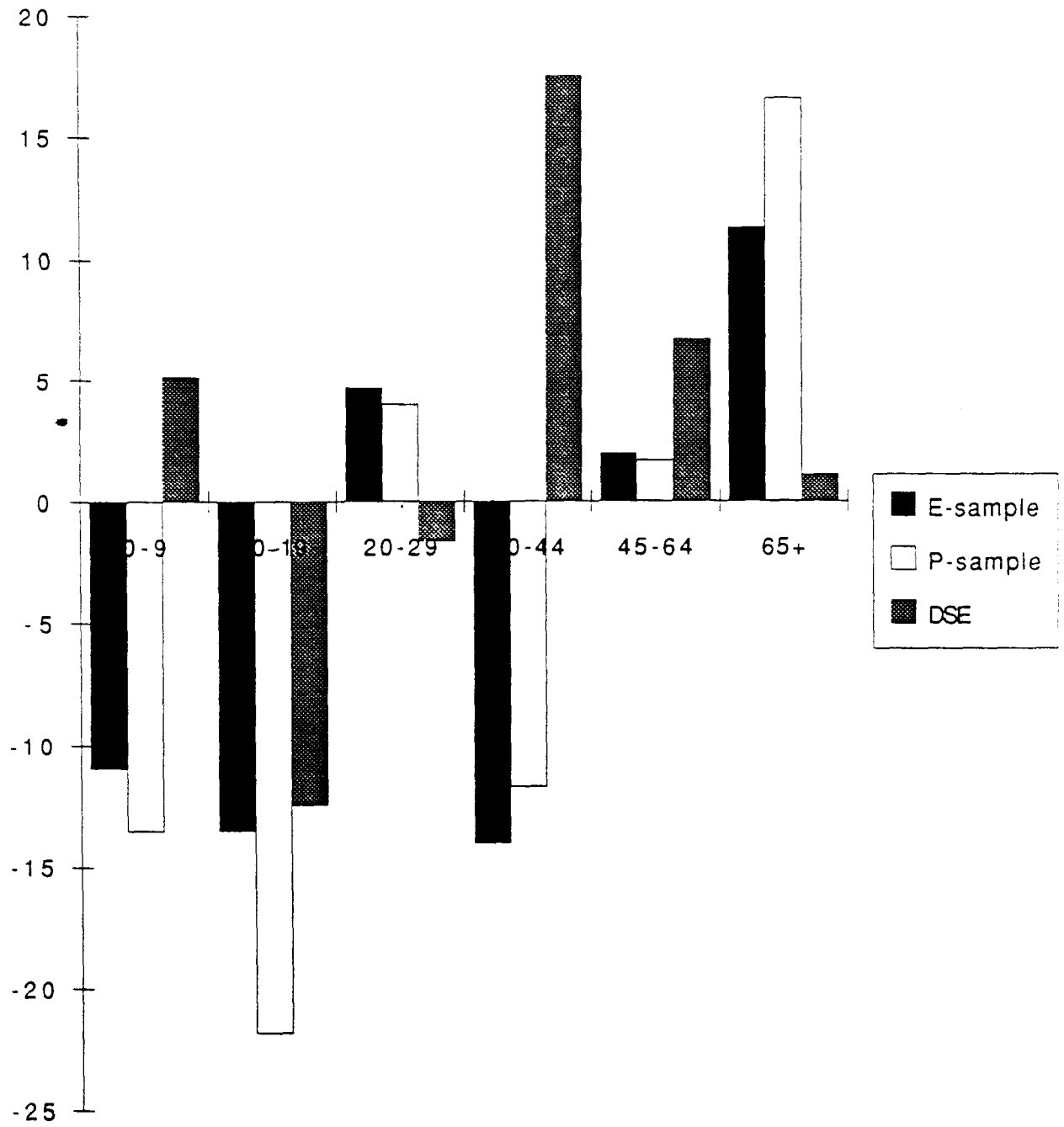
Results of the 1988 Dress Rehearsal Post-Enumeration Survey Test Site In Eastern Washington State

Table 12 All Persons In The Eastern Washington Test Site

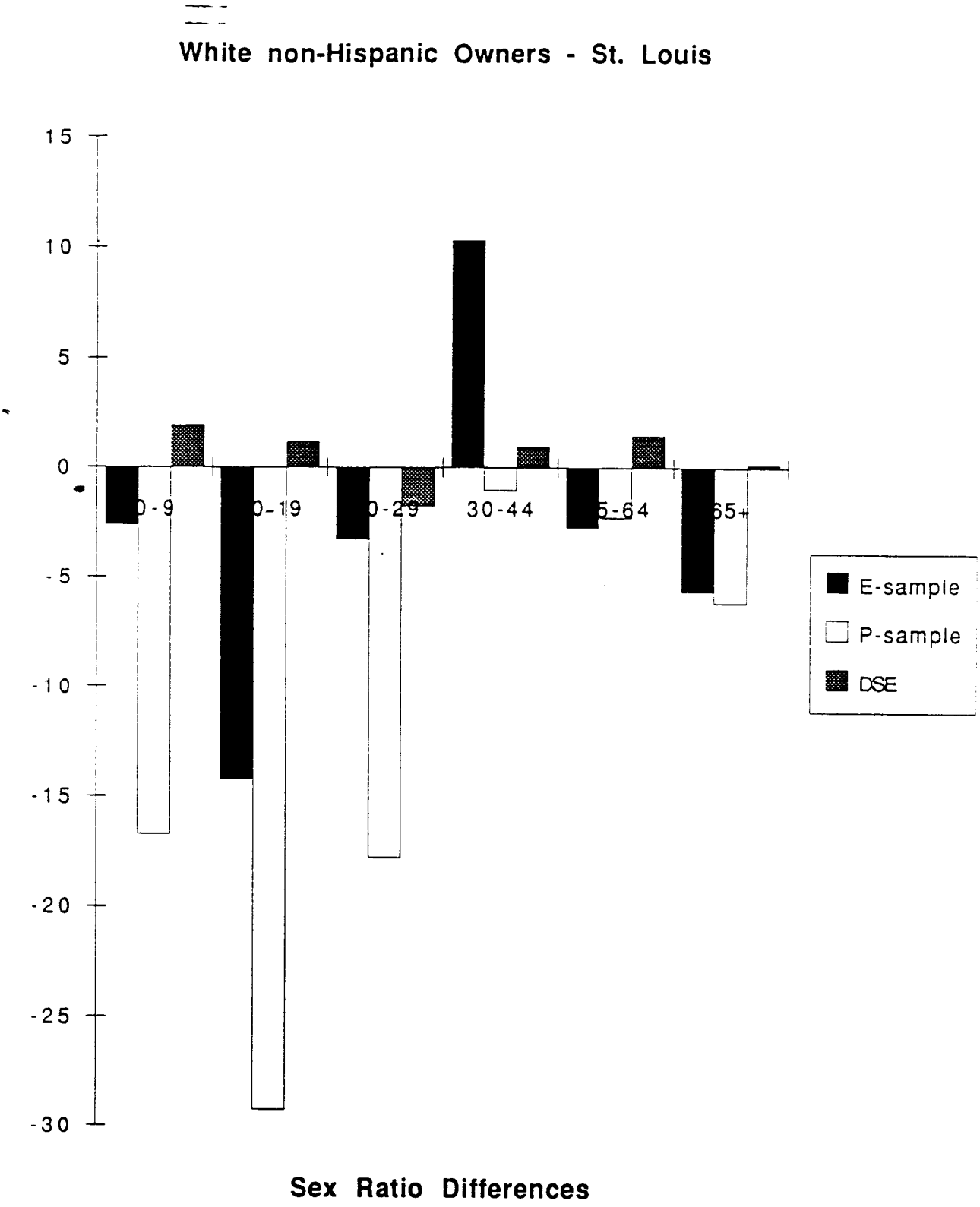
Age in Years	Census	E-sample (weighted)	P-sample (weighted)	DSE
Male				
0-9	21332	23775	21257	21625
10-19	20700	21059	18887	21315
20-29	22243	18167	16335	27523
30-44	28388	27814	25136	30724
45-64	22413	26208	26231	24650
65+	14175	15688	13211	13811
Female				
0-9	20021	20701	18379	22641
10-19	19479	19898	21336	19703
20-29	20564	14417	14484	23020
30-44	27579	30480	29480	29245
45-64	22887	27317	24984	24243
65+	17009	15409	15924	17114

Chart A

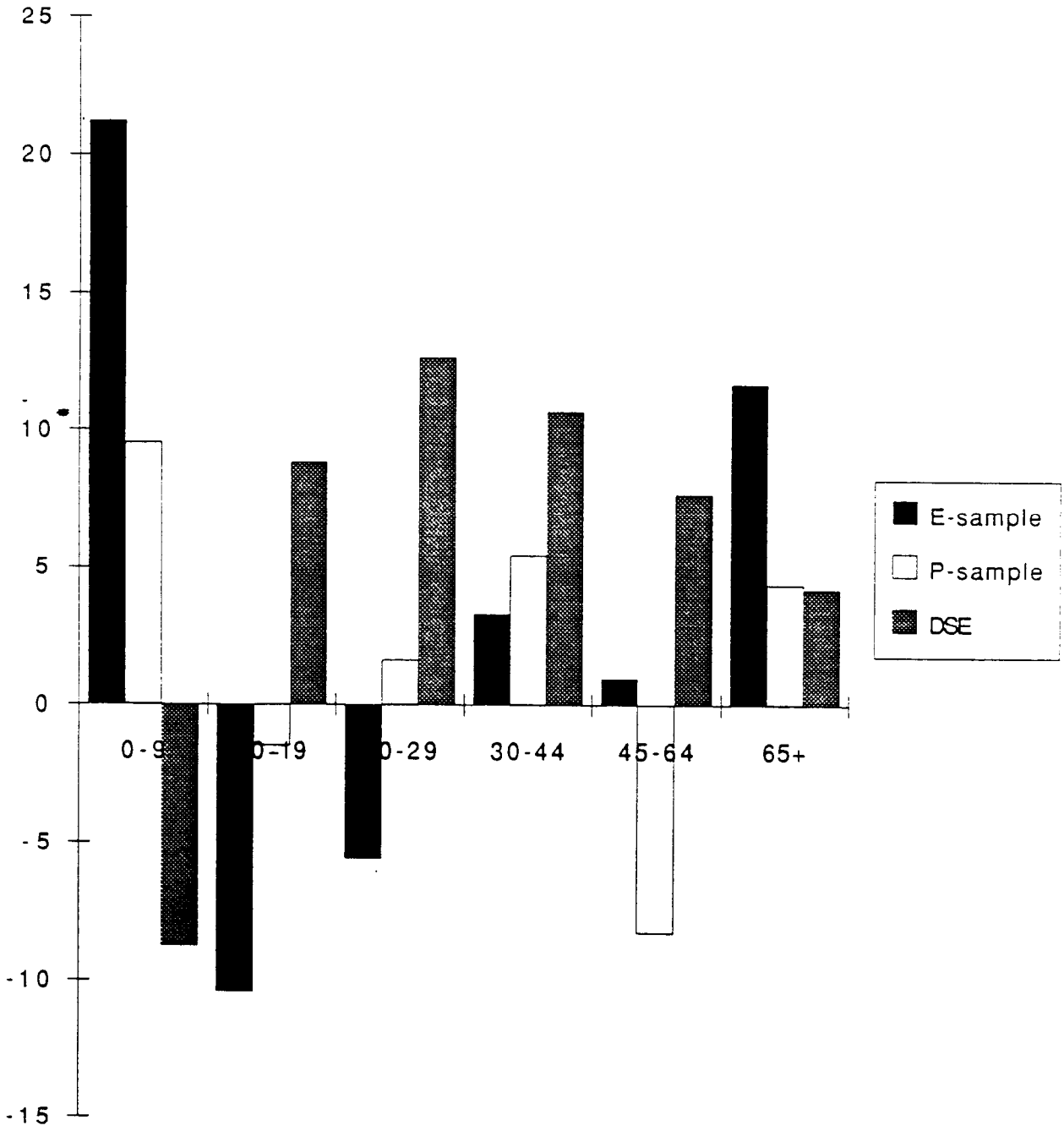
White non-Hispanic Renters - St. Louis



Sex Ratio Differences


White non-Hispanic Owners - St. Louis
15
10
5
0
-5
-10
-15
-20
-25
-30
0-9
0-19
0-29
30-44
5-64
65+
E-sample
P-sample
DSE
Sex Ratio Differences

All Other Renters - St. Louis



Sex Ratio Differences

Chart D

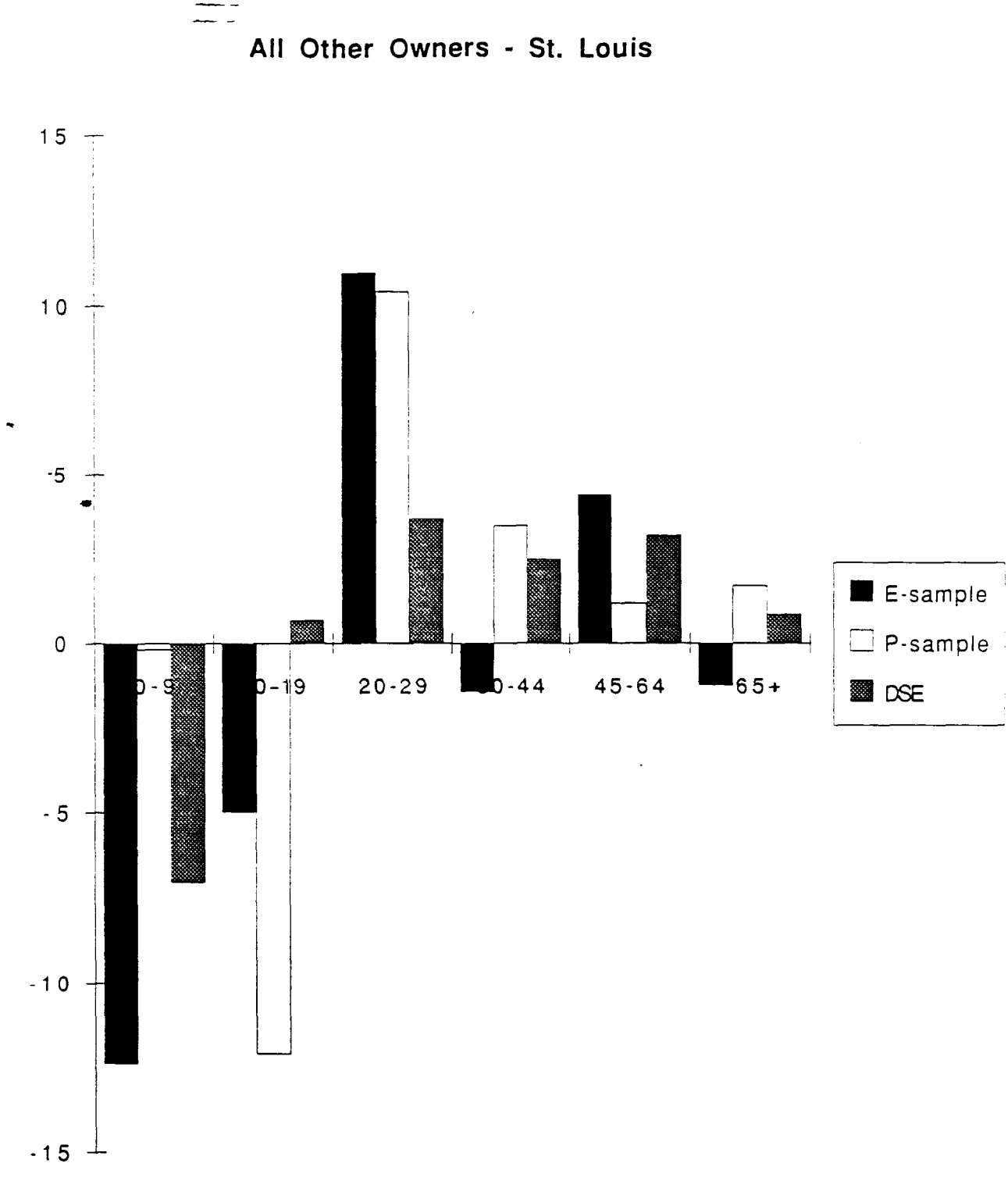

All Other Owners - St. Louis
15
10
5
0
-5
-10
-15
0-9
0-19
20-29
0-44
45-64
65+
E-sample
P-sample
DSE
Sex Ratio Differences

Chart E

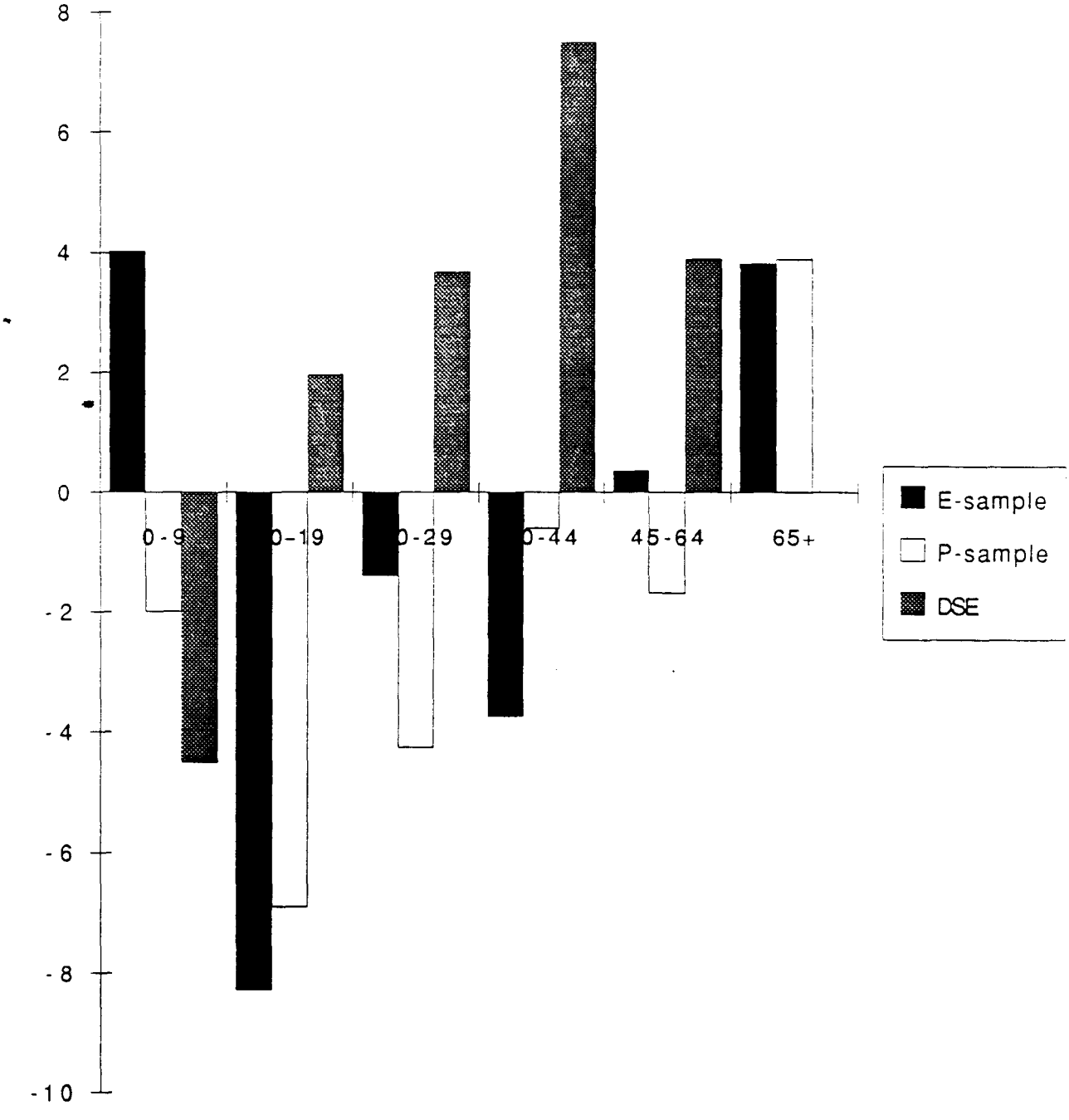
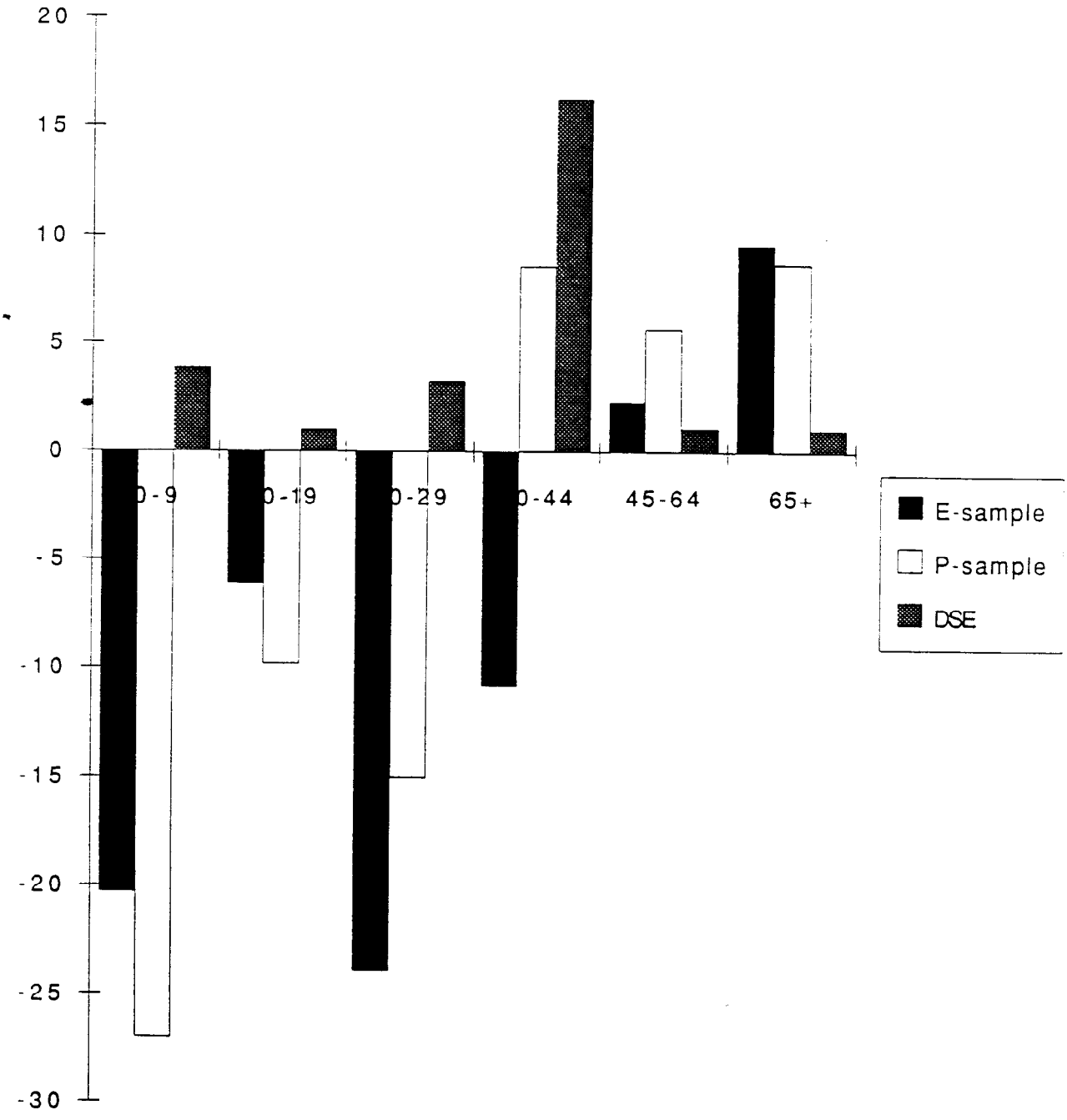

All Persons in St. Louis
8
6
4
2
0
-2
-4
-6
-8
-10
0-9
10-19
20-29
30-44
45-64
65+
E-sample
P-sample
DSE
Sex Ratio Differences

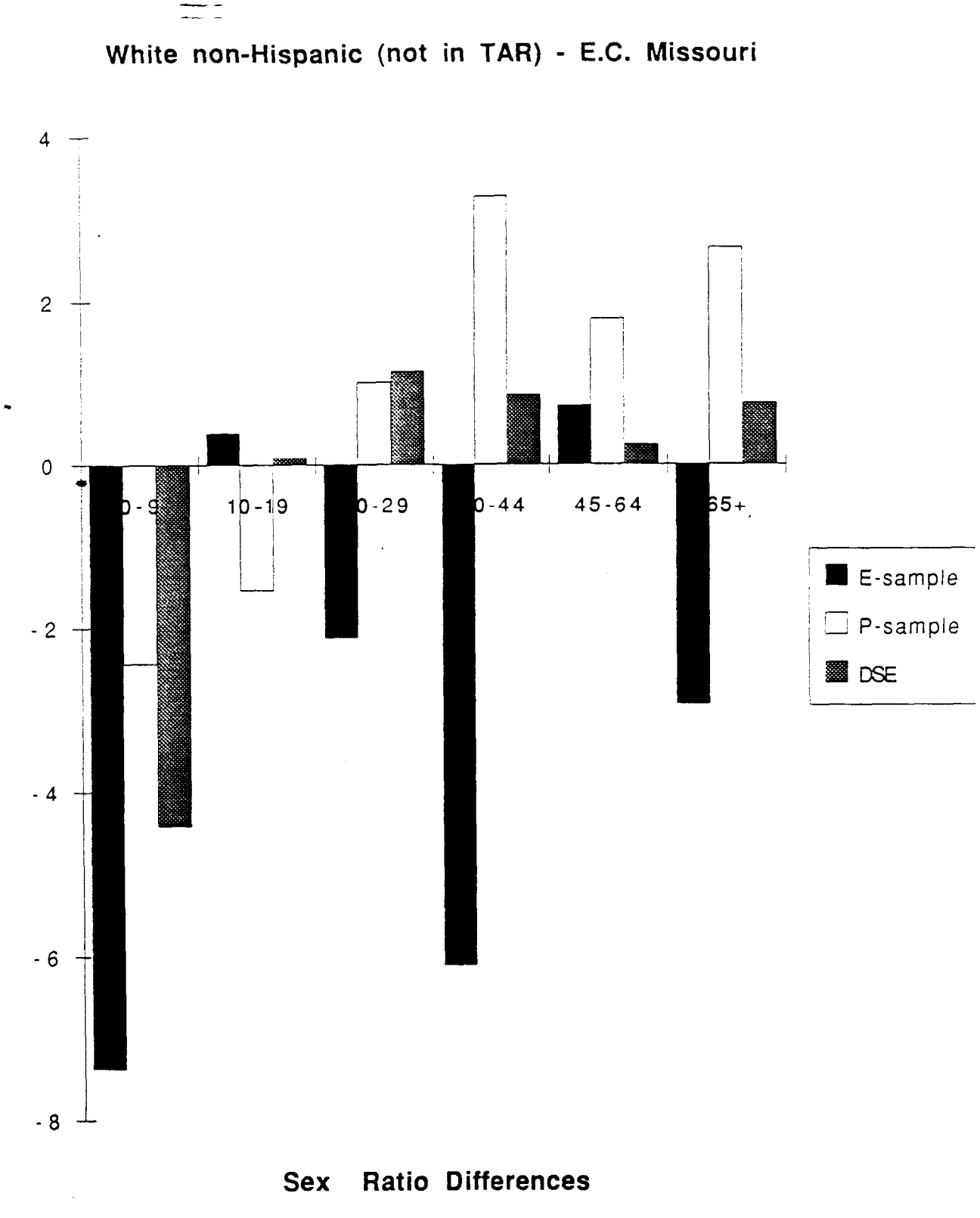
Chart F

White non-Hispanic (TAR) - E.C. Missouri

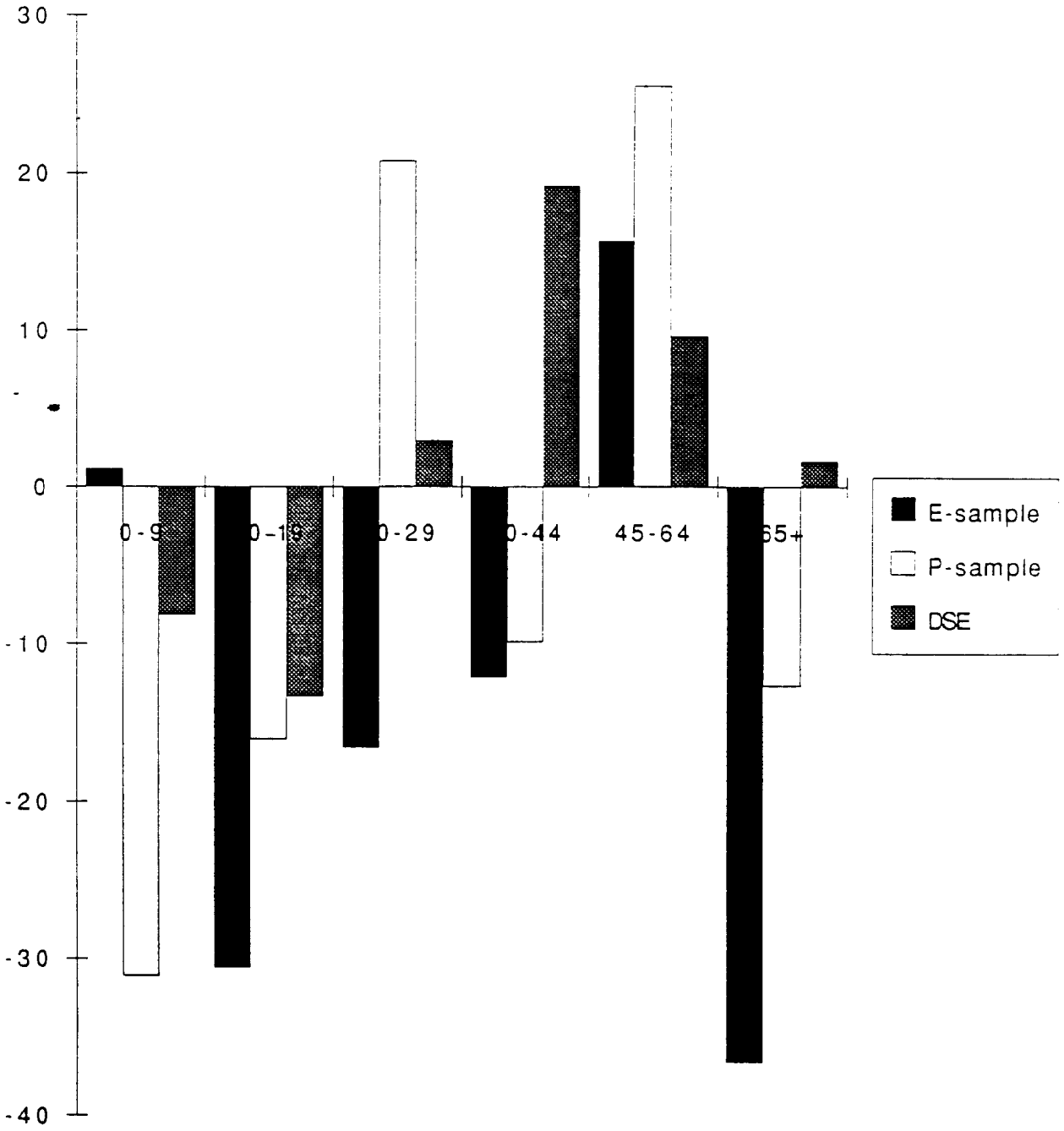


Sex Ratio Differences

Chart G


White non-Hispanic (not in TAR) - E.C. Missouri
4
2
0
-2
-4
-6
-8
10-19
0-29
0-44
45-64
65+
E-sample
P-sample
DSE
Sex Ratio Differences

All Other Persons - E.C. Missouri



Sex Ratio Differences

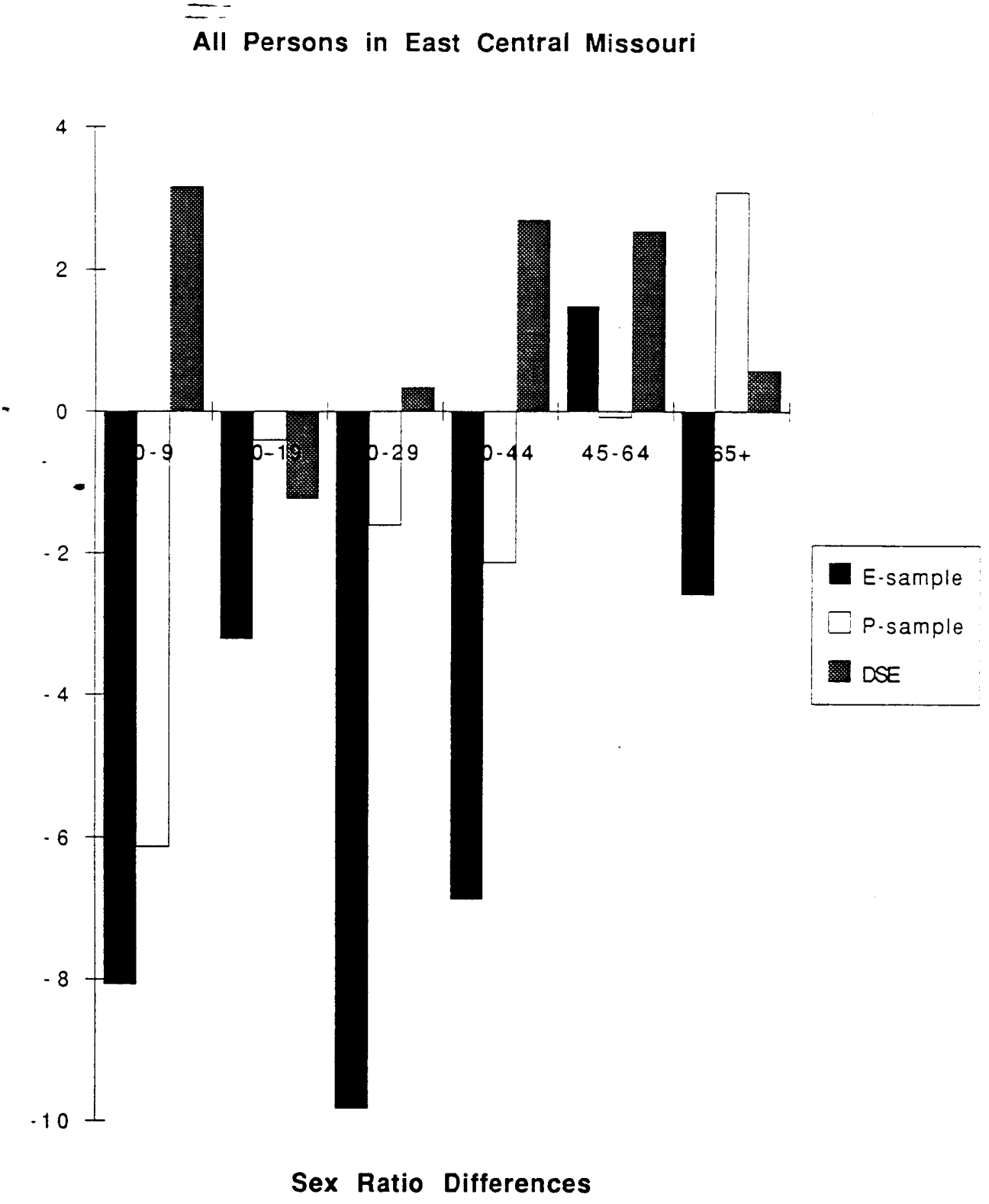
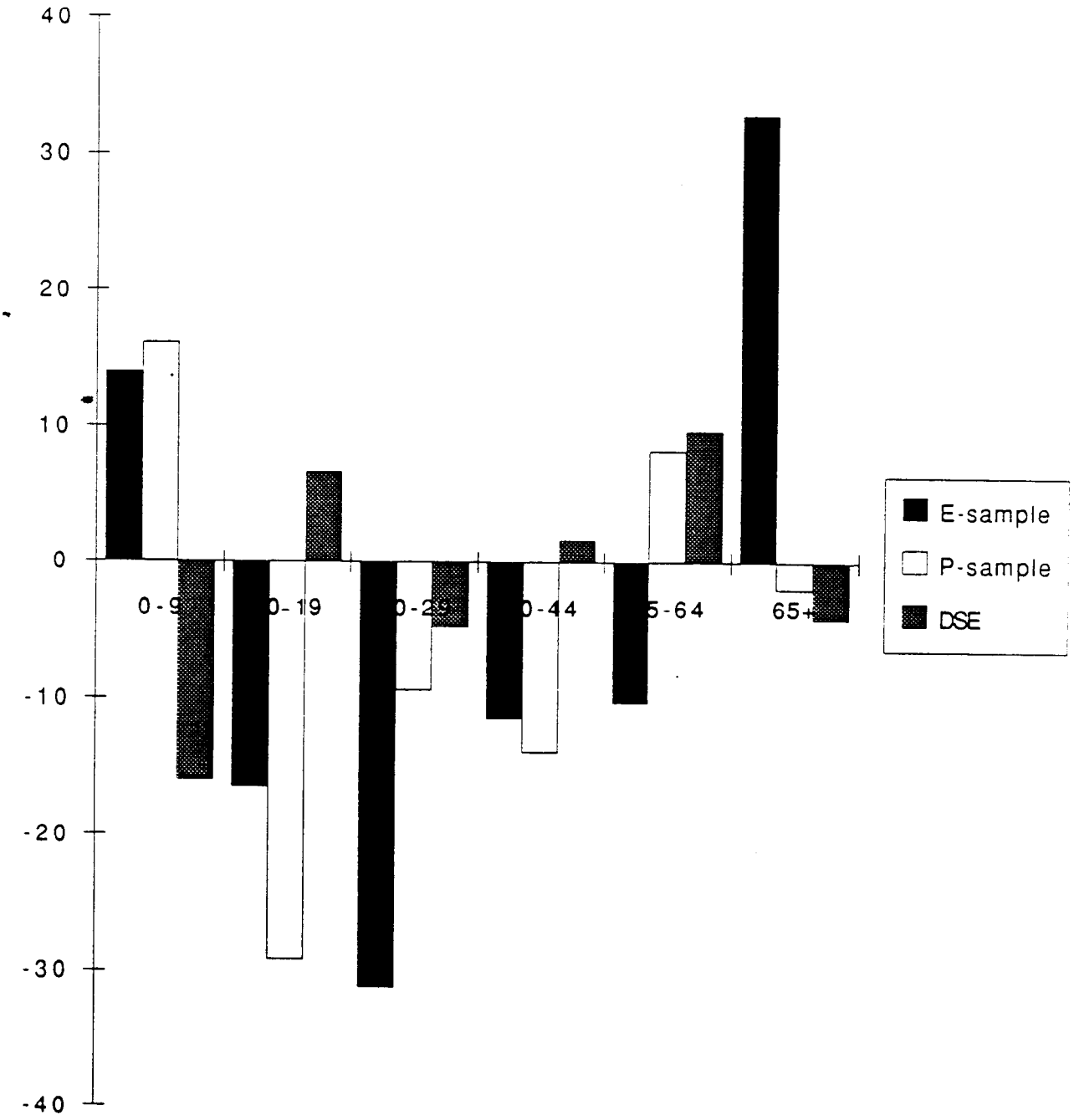

All Persons in East Central Missouri
4
2
0
-2
-4
-6
-8
-10
0-9
0-19
0-29
0-44
45-64
65+
E-sample
P-sample
DSE
Sex Ratio Differences

Chart J

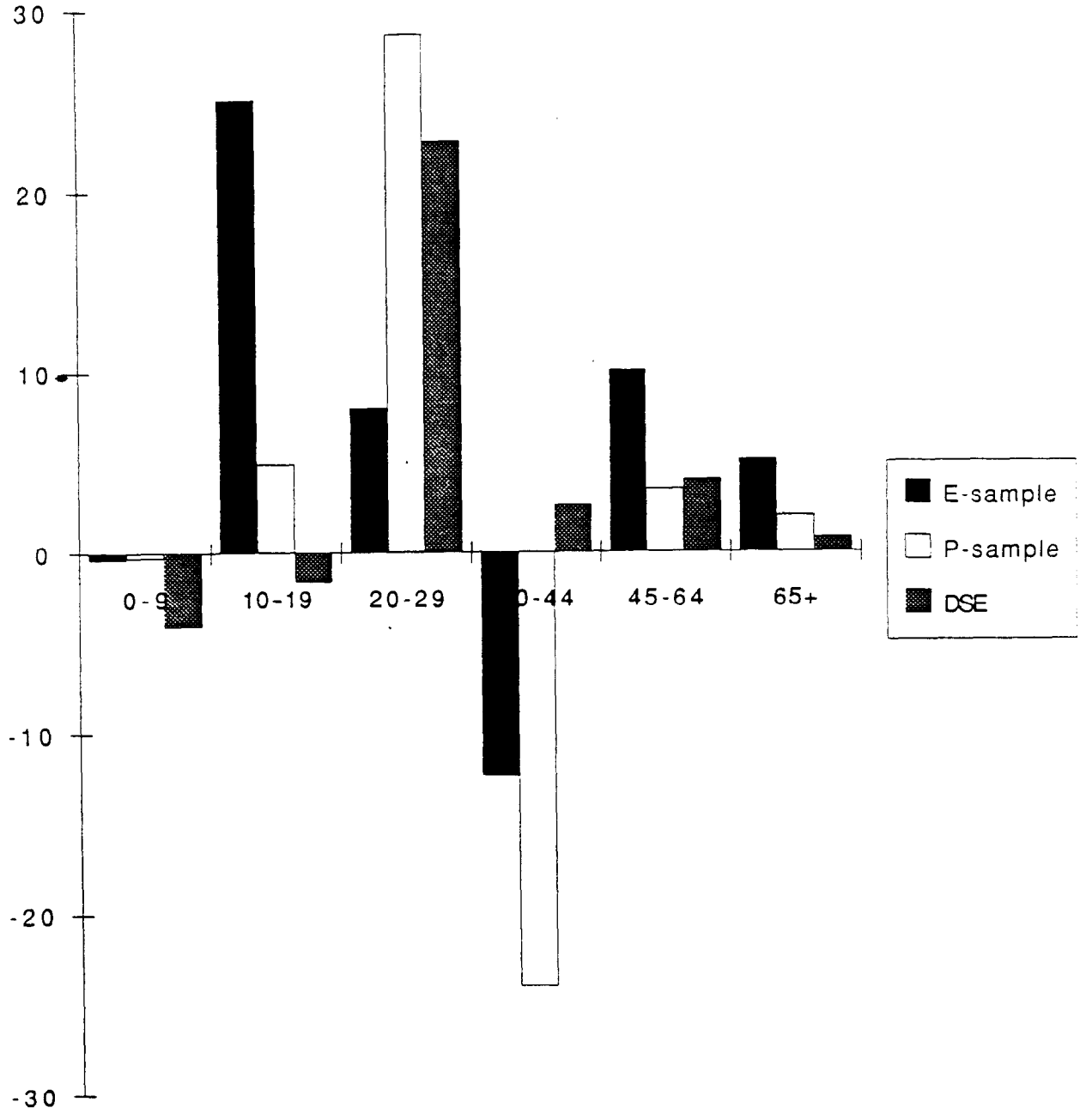
Persons in List/Enumerate Areas - Washington State



Sex Ratio Differences

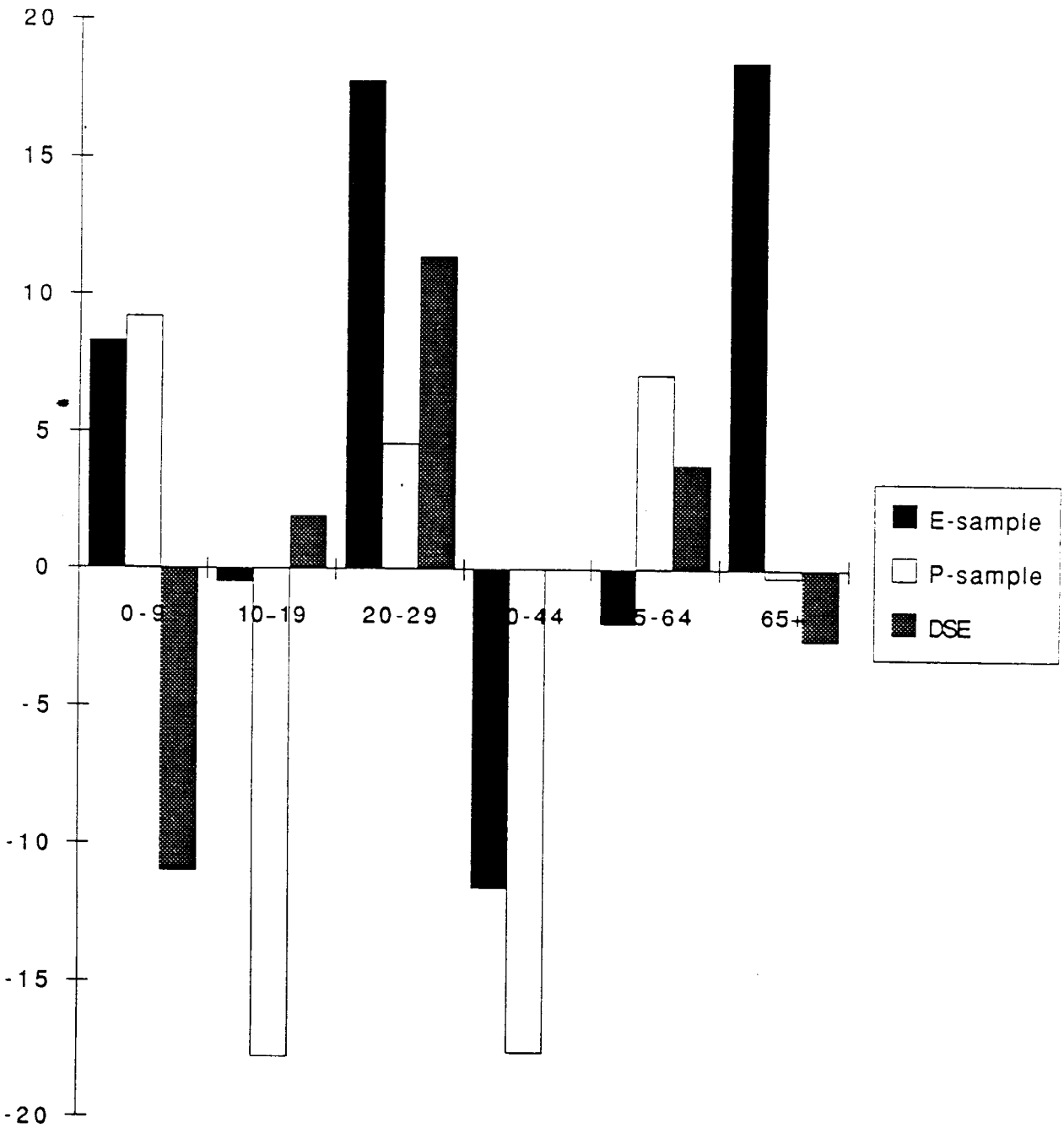
Chart K

Persons not in List/Enumerate Areas - Washington State



Sex Ratio Differences

All Persons in Washington State



Sex Ratio Differences