

National Children's Bureau

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Background to Working Papers from the National Child Development Study

1. This Working Paper reports on the analysis of data relating to 12,538 23 year olds living in Great Britain who have been the subjects of a longitudinal study since their birth in 1958. The data were obtained by means of interview survey during late 1981 and early 1982. This survey and this Working Paper form part of the fourth follow-up of the National Child Development Study which is being sponsored by five Government departments - DESS, DES, DE, MSC and DOE. Preparation for the survey began in May 1980 and the project is due for completion by December 1984
2. The National Child Development Study (NCDS) is a longitudinal study which takes as its subjects all those living in Great Britain who were born between 3 and 9 March 1958. Since the original birth survey in 1958 the National Children's Bureau has sought to monitor the social, economic, educational and health circumstances of the surviving subjects. To this end major surveys were carried out in 1965 (NCDS1), 1969 (NCDS2), 1974 (NCDS3) and 1981 (NCDS4). For the purposes of the first 3 surveys the birth cohort was augmented by including those new immigrants born in the relevant week and information was obtained with the active co-operation of parents, teachers and the schools' health service as well as members of the NCDS cohort. The 1981 survey differs in that no attempt was made to include new immigrants since 1974 and information was obtained from the subject only.
3. The target sample for the 1981 survey was a total of 16450 individuals - all those who had participated in NCDS1, NCDS2 or NCDS3, excluding those known to have emigrated or to have died. Following initial tracing by the Bureau details of names and addresses were passed to NOP Market Research Limited and Social and Community Planning Research who carried out further tracing and subsequent interviews. The 12538 interviews obtained represent 76 percent of the original target sample and 93 percent of those traced and contacted by interviewers.
4. The interview survey was carried out by NOP and SCPR between August 1981 and March 1982. Each interview took approximately 90 minutes and information was obtained on employment, unemployment and periods out of the labour force; apprenticeship and training; post-school education; marriage, cohabitation and children; housing and household; family income, savings, investment and inheritance; respondent reported health and health related behaviour; and voluntary activity and leisure.
5. Completed questionnaires were visually checked by NOP and SCPR and the data then transferred by them to computer. Following preliminary computer editing by NOP and SCPR more detailed checks have been carried out by NCB. The majority of open-ended questions were coded by SCPR using coding frames developed by NCB. All open-ended questions related to health states were coded by NCB.

COMPARING NCDS 4 TO THE 1981 CENSUS

1. Introduction

This paper attempts to compare NCDS 4 results to the UK 1981 Census. The objective is to check that NCDS 4 is representative. The comparisons made here are based on Census results published in Table 15 of the National Report (1), which relates to sex, marital status, student status, economic activity and unemployment. This table refers to the population usually resident in private households in Great Britain.

Subsequent papers from the Bureau will look directly at responders versus non-responders to NCDS 4 in terms of their NCDS 3 characteristics. This will provide further checks on the representativeness of NCDS 4.

2. Methods of comparison

A number of methods for comparing NCDS 4 to the 1981 Census have been considered. Firstly, OPCS could be asked to produce tables based on the population born the same week as the cohort. However, we have been advised that a 100% sample of this population would cost about £20,000 to produce.

A 10% sample would be cheaper, but this was ruled out for two reasons. Firstly the tables would not be ready until November 1984 at the earliest. Secondly, with an effective Census sample of only 1650, the statistical power of comparisons would be too low for us to reliably detect quite large differences between NCDS 4 and the Census even if they existed.

Accordingly, we decided to compare NCDS 4 to published Census results, wherever the age breakdown of the latter was sufficiently fine. As it turned out, most of the problems we encountered would apply with equal force to any method of comparison.

Firstly, NCDS 4 excludes anyone who has entered the country since 1974, the time of the NCDS 3 survey, while the UK Census includes them.

Secondly, Cohort members were some four to nine months younger when sampled at census than they were at interview. This can make a substantial difference in the proportions married and employed. It is therefore necessary to compare NCDS 4 figures to a notional population, derived by extrapolation, who were the same age at census as our Cohort were at interview. This is a method that makes a number of assumptions: that the notional census cohort should have the same properties as ours at the same age, and that the notional cohort can be meaningfully derived. Further problems arise from the fact that, even if the real and notional cohorts are the same in the above sense, their situation in April 1981 (census) will not be the same as in August to December (interview). A number of students in April will have just finished their courses before interview, seasonal fluctuations in unemployment will also be at work.

In the case of student status, therefore, NCDS 4 information has been used to derive the number of cohort members who were students at the time of census.

3. Results

3.1. Target population and response rate

Estimates of the total population of cohort members present on census night, usually resident, and usually resident in private households, have been derived from Tables 5, 6 and 15 of the National Reports, assuming that the age structures of each are the same as in Table 15 (usually resident in private households), that births are evenly distributed over March 1958, and adjusting for the monthly variation in births in 1958 (2).

These figures can be compared to both the total size of the NCDS 4 sample, and the number conforming to the census definition of "usually resident in private households". The latter includes anyone designated as a student (see definition 3, in Appendix A).

Table 1. Target populations and response rate

| <u>Estimates from Census of NCDS 4 target populations</u> | | |
|---|----------------------------------|--------------------------|
| Present on Census night | | 16594 |
| Usually resident | | 16205 |
| Usually resident in private households | | 15816 |
| NCDS 4 Issued target (3) | | 16278 |
| NCDS 4 total interviewed | | 12538 |
| NCDS 4 usually resident in private households | | 12304 |
| <u>Response Rates</u> | <u>Re. Estimates from Census</u> | <u>Re. issued target</u> |
| Total population | .756 | .770 |
| Usually resident in private households | .778 | |

The NCDS 4 target size corresponds very closely to the size of the Cohort estimated from the Census.

3.2. Sex

Along with all subsequent comparisons, these are based on Table 15 of the National Report, which gives a breakdown in one year age bands.

Table 2. Proportion of females

| | |
|------------------------------|--------------------|
| Census: Age 23 last birthday | .497 |
| Age 24 last birthday | .498 |
| NCDS 4: | .497 - .501 - .506 |

Table 2 includes 95% confidence limits on the observed NCDS 4 value. These bracket the census figures.

3.3. Marital status

The proportion married in Table 15 has been plotted by age in Figure 1, which brings out clearly the difficulty presented by the four to nine month gap between interview and census. The NCDS 4 results are presented as a horizontal line, with 95% confidence limits shown at either end. The vertical line corresponds to the (weighted) average age of the cohort at the time of interview, and its intersection with the curves thus show the proportion married in the notional census cohort who were the same age at census age as our Cohort was at interview.

If all three lines intersect at the same point, "perfect" agreement is indicated.

For both men and women, NCDS 4 gives slightly more married than the notional cohort census. This is not surprising, as married persons are easier to trace. But the difference is small enough for us to conclude that NCDS 4 is representative in this respect.

3.4. Student status

Figure 2 presents the proportion of students, by sex, in the same fashion as before (see definition 3 for "student"). In this case two sets of NCDS 4 estimates have been derived; first for student status at the time of Census, and second for the time of interview. It is evident that in both cases NCDS 4 underestimates the number of students by a large fraction.

Possible reasons for the discrepancy are not hard to come by. Firstly, the NCDS 4 target sample will exclude all foreign migrants to the UK since 1974, among whom we may expect to find a very large proportion of students on post-graduate courses. This applies to both time points, census and interview.

Information available from the DES indicates that in the year 1981/2, 29% of postgraduates were from overseas, and about 6% of undergraduates. In addition, overseas undergraduates tend to start their courses later in life than home students. Taking this into account, we would estimate the proportion of foreign students aged 23 to be at least 17% (4). This would account well for the observed NCDS 4 shortfall of 17% - 25% in men and 17% - 23% in women.

At the time of interview, many students will have just finished their courses, while the census was taken just before the end of courses. For this reason, it would probably be sensible to disregard the NCDS 4 estimates at the time of interview, and conclude that at Census NCDS 4 is representative of students (5).

3.5. Economic activity

Figure 3 compares NCDS 4 (at time of interview) to the national census cohort for the proportion economically active (definition 4). The NCDS 4 figure is the same as Census in men, but is higher in women by about .035.

3.6. Unemployed but economically active

Finally, Figure 4 shows results for the proportion unemployed but economically active. We see an underestimate in NCDS of about .02 for men, but very close agreement for women.

Seasonal changes in registered unemployment would lead us to expect NCDS 4 to overestimate the proportion Active but unemployed, as September, 1981 unemployment figures (excluding school leavers) were higher by a factor of 1.1 for men and 1.14 for women (6), when compared to the figures for April, the date of Census.

The asymmetry in results for men and women in Figure 4, and in Figure 3, are a cause for concern. No explanations have been put forward as to why this should be.

4. Discussion

In terms of sex, marital status, and probably student status, NCDS 4 has achieved a satisfactorily representative sample. In addition, Figure 1 (Marital status) appears to vindicate the method of comparison we have used.

As for economic activity and unemployment, there is clearly some doubt about whether NCDS 4 is representative or not. The NCDS 4 questionnaire is quite complex, and it is possible that the observed discrepancies are due to differences of definition rather than of sample.

In coming months, we might expect these issues to be clarified in the following ways:

1. Researchers will become more familiar with their sections of the questionnaire, and may see ways in which the definitions I have used could be improved on.
2. OPCS may be able to provide some unpublished tables with a fine age-breakdown that could give further clues as to the discrepancies.
3. Responders versus non-responders to NCDS 4 will be compared with respect to relevant NCDS 3 characteristics. This is a more powerful and direct check on representativeness, as it avoids definitional problems entirely.

APPENDIX

NCDS 4 DEFINITIONS

1. Usually resident in private households

This includes all those with N5029=1, plus anyone designated as a student at the time of interview OR census.

2. Marital Status

- Includes the married and the separated: N5113 = 2 or 3.

3. Student status

Start and end dates of courses had to bracket the census/interview date, and the type of course had to meet the following requirements:

N4544 (current course) = 1 or 2 (full-time or sandwich)

N4572, N4621, N4633 (other courses) = 1 (full-time)

N4462, N4475, N4520 = 1 (training courses were TOPS courses).

4. Economically active

Persons were considered EMPLOYED if currently working as indicated by N4150, 59, 68, 77 = 0, and N4152, 61, 70, 79 = 1.

Persons were considered ACTIVE BUT UNEMPLOYED if N4755 = 1 or 3 (temporarily sick or seeking employment).

The economically active were the sum of the Employed and the Active but Unemployed, less anyone considered to be a student at time of interview.

5. Active but unemployed

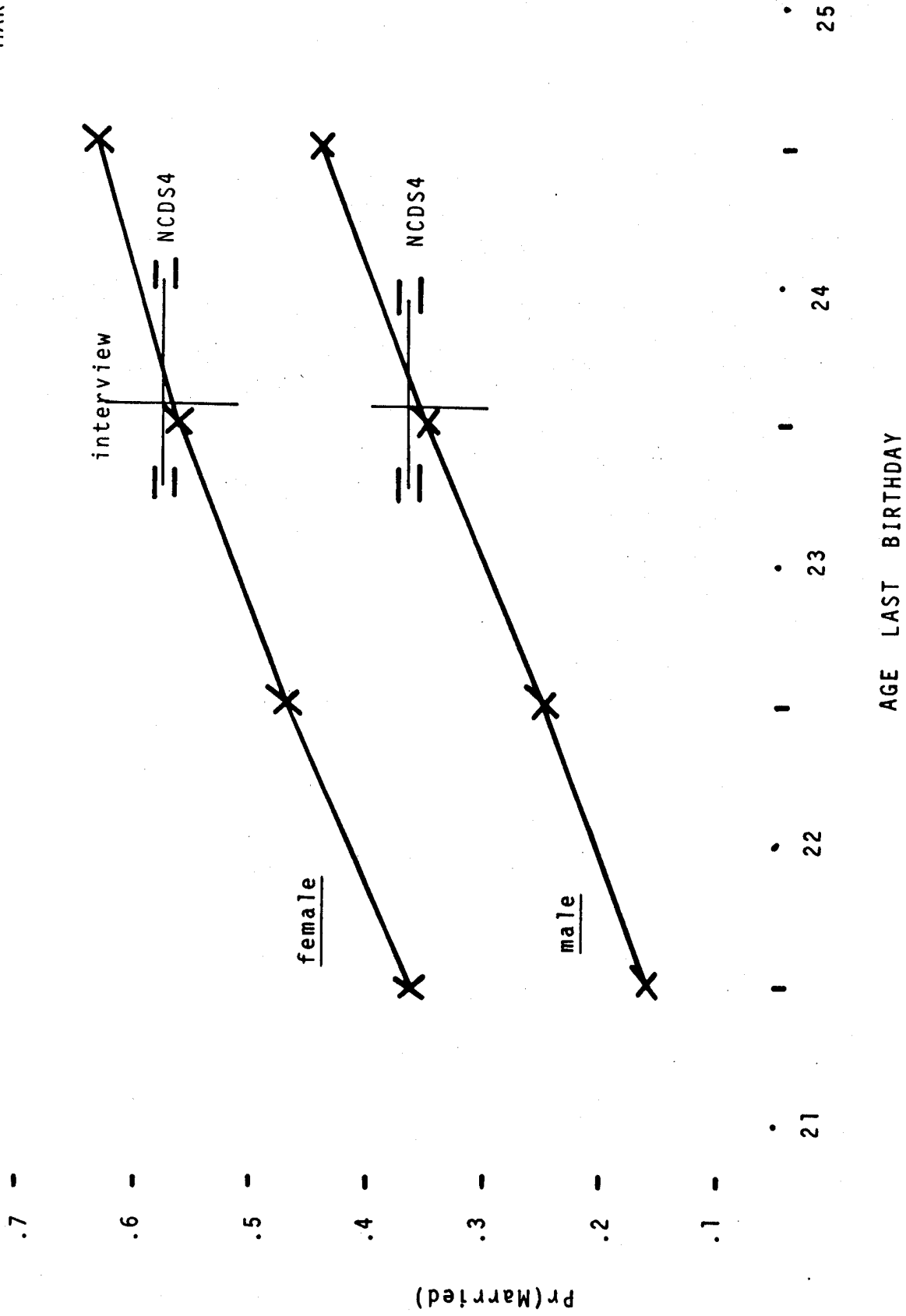
See above. But those who were students at the time of interview could not be Active but unemployed.

REFERENCES AND FOOTNOTES

1. National Report: Great Britain, Part 1., OPCS Census 1981, HMSO, 1983.
2. Registrar General's Statistical Review, England and Wales 1958, Part 2.
3. This figure is the 16021 Issued target sample, less the 22 subsequently found to be deceased, less the 391 subsequently found to have emigrated, plus those who had earlier indicated their adamant refusal to participate in NCDS.
4. According to DES, 29% of the 60300 post-graduates are foreign, and about 6% of the 397400 under-graduates. About half of overseas students start their under-graduate course at the age of 21 or over while only one-third of home under-graduates do so.
5. These adjustments for foreign students clearly assume that a substantial number of foreign students at Census are counted 'usually resident in private households'. This assumption may be open to question.
6. Employment Gazette, 91,5, May 1983, Table 2.2: GB Summary.

MARITAL STATUS

FIG. 1



STUDENT STATUS

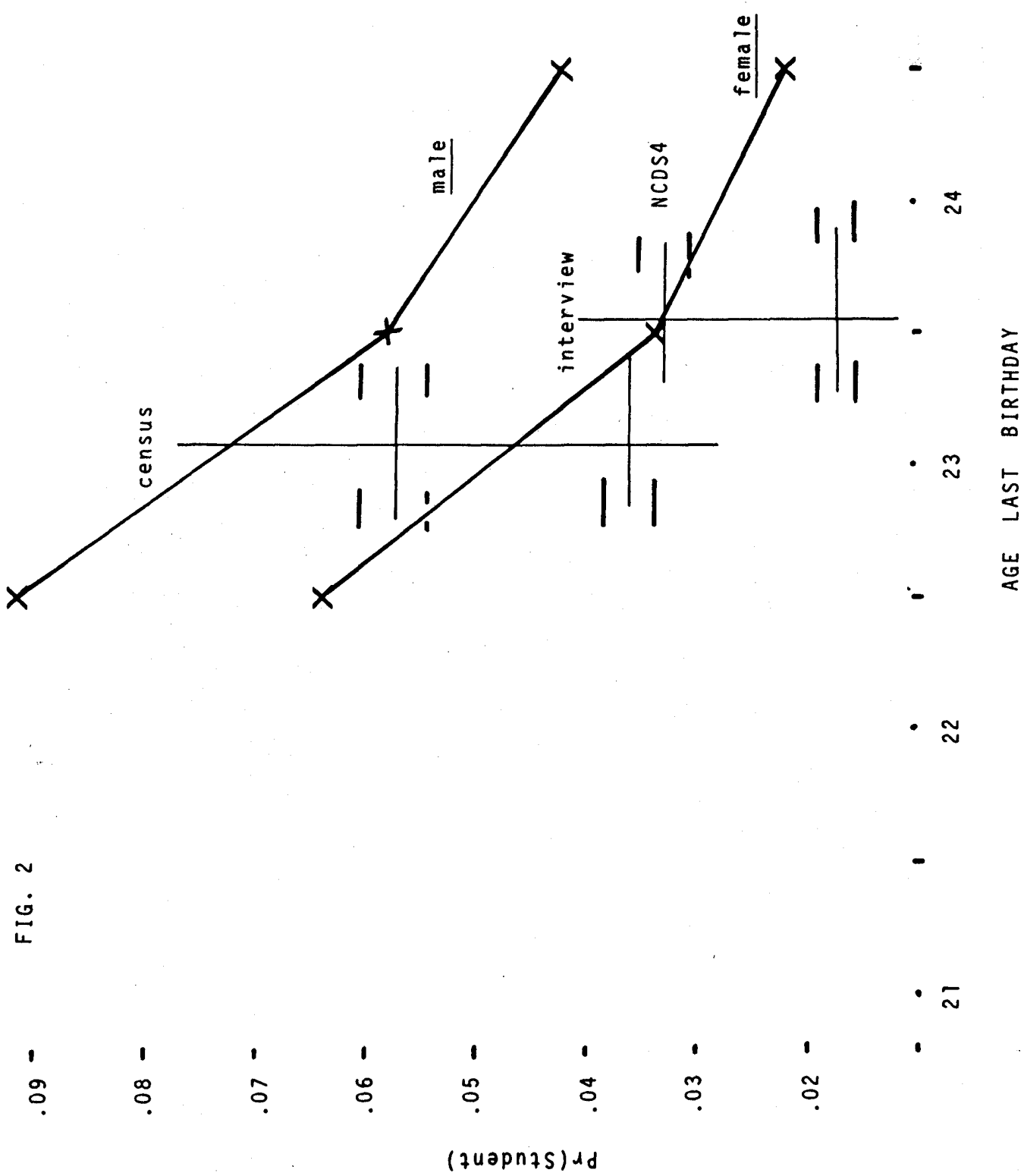
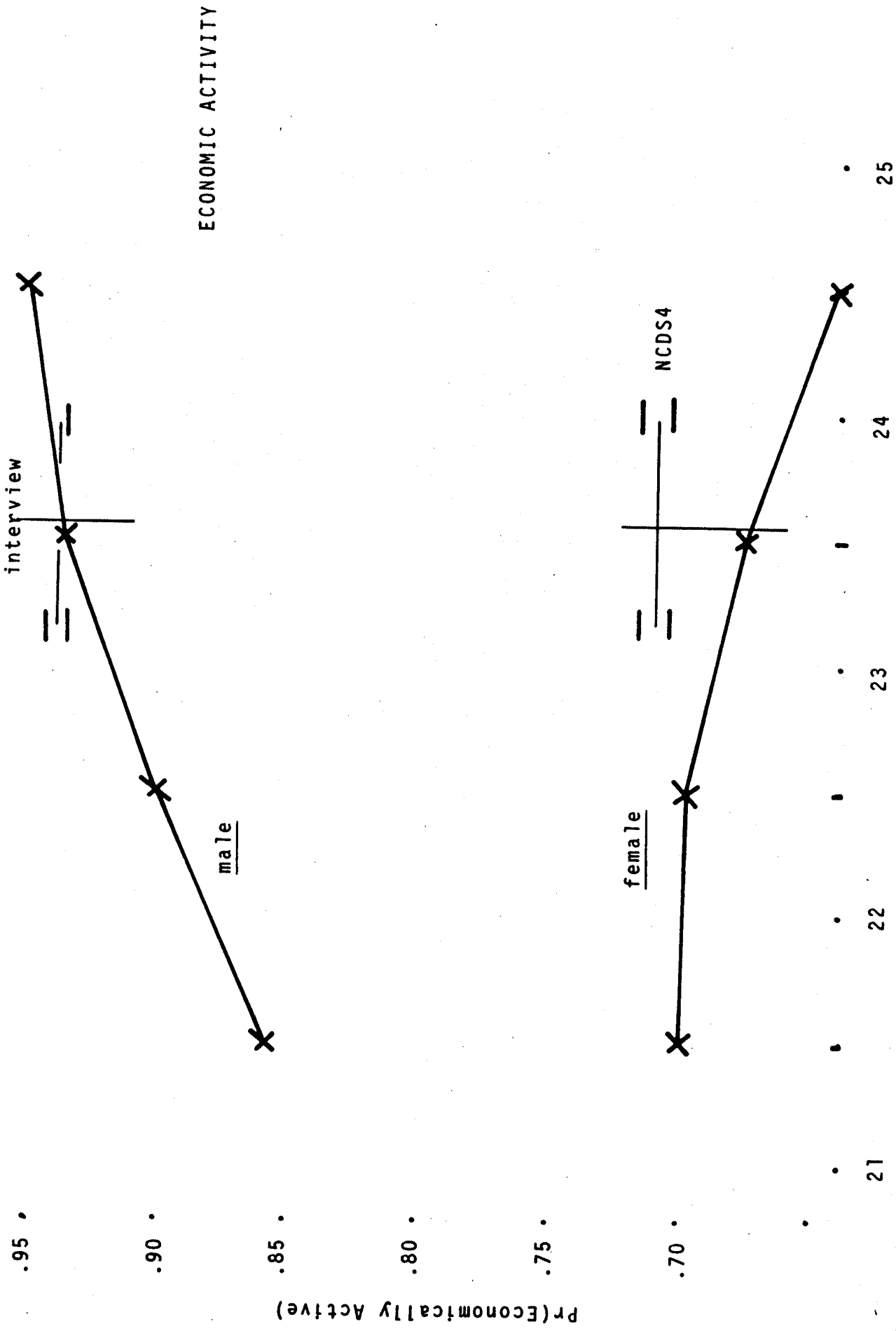


FIG. 2

AGE LAST BIRTHDAY

FIG. 3



UNEMPLOYED BUT
ECONOMICALLY ACTIVE

FIG. 4

