

An Evaluation of Telephone Interviewing on the British Labour Force Survey

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Abstract: This study evaluates the effects of extending telephone interviewing to newly sampled addresses on the annual “boost” to the British Labour Force Survey. An experiment was carried out on a sub-sample of the survey with addresses identified as having a telephone number allocated randomly to telephone or face to face interviewing. The telephone response rate was significantly lower than the face to face response rate; but, by reissuing telephone non-response for face to face interviewing, this difference was largely eliminated. There were some significant differences in responses obtained by telephone compared with face to face interviewing, but these differences did not affect any of the key

demographic or employment variables. As a result of these findings, it was decided to extend telephone interviewing to newly sampled addresses on the annual boost from the 1987 survey onwards. Difficulties in administering of carrying out a mixed mode project on this scale for the first time led to a response rate for 1987 at the low end of the expected range. Nevertheless, preliminary results for 1988 suggest that these initial difficulties have been overcome.

Key words: Telephone coverage; telephone interviewing; matching; mode of interview response comparisons; mode effects; labour force survey.

1. Introduction

Since 1984, the Office of Population, Censuses and Surveys (OPCS), United Kingdom, has made use of telephone interviewing on its Labour Force Survey (LFS). The LFS consists of two elements: one element employs a quarterly panel design whilst the other provides a “boost” sample for one quarter of the year. On the panel element, all first interviews are conducted in person. With respondent permission the second and subsequent

follow-up interviews are conducted by telephone from a centralised facility. Once telephone interviewing on the panel element had been successfully established, attention turned to the annual boost element which had originally been carried out entirely by personal visit. The main concern here was whether telephone interviewing could be introduced for households new to the survey without having a detrimental effect on response rates or the accuracy of estimates. A small scale experiment was conducted as part of the 1986 annual boost survey; and, on the basis of this experiment, the decision was taken to introduce telephone interviewing for new boost households from 1987 onwards.

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Section 2 describes the two elements which make up the Labour Force Survey, the implications for the survey of the relatively low telephone coverage rate in the United Kingdom, the reasons for moving towards telephone interviewing and some of the problems encountered in linking telephone numbers to a list of postal addresses. Section 3 discusses the findings of the small-scale experiment conducted as part of the 1986 survey whilst Section 4 considers the effect on response rates of the move from face to face to telephone interviewing.

2. Description of the British Labour Force Survey

2.1. General background

The LFS has been carried out in Great Britain since 1973. With the increasing uses to which government departments put the data, it was decided to redesign the survey; in particular to extend interviewing throughout the year in order to provide regular trend data. As a result the survey was divided into the panel and boost components described below.

The survey involves completing a questionnaire for each adult household member. The information can be obtained directly from each member or by proxy. Apart from exceptional cases, the proxy information is collected from the head of household or spouse. LFS has few open-ended questions. All interviewing is carried out using paper and pencil methods. The questionnaires for the two modes (face to face and telephone) are virtually identical with the main difference being the handling of a number of prompt cards.

Methodological work, described elsewhere (Foxon (1988)), is in progress to evaluate the use of computer-assisted interviewing for data collection in the future.

2.2. Telephone coverage in the United Kingdom

Sykes and Collins (1987) report telephone coverage rates of approximately 82 % in the United Kingdom for the year 1985–86. Telephone coverage rates are also significantly correlated with three of the key variables on employment surveys: economic activity, age, and social class. Telephone coverage is appreciably lower amongst the unemployed than amongst those in work. It is consistently found to be lower for those aged 21–25, then increasing by age until the 60–70 age group, where it starts to decline. Tables 1 and 2 show that the lower telephone coverage rate among the unemployed compared with those in work still holds after controlling for age and social class. The causal relationships accounting for this are complex in that not having a telephone may make it more difficult to obtain employment, but also the unemployed would have more difficulty in being able to afford a telephone. These results indicate that on a survey with this purpose it would clearly be inappropriate to rely solely on telephone interviewing even if the results were inflated to age and social class control totals.

Table 1. 1986 LFS Annual Boost Survey: telephone coverage by age and economic activity

		Age			
		16-20	21-25	26-30	31-60
		%	%	%	%
i.	Working	80	75	80	86
ii.	Unemployed	58	50	58	61
Bases	i.	(5 583)	(6 646)	(6 286)	(32 794)
	ii.	(1 368)	(1 244)	(929)	(3 041)

Table 2. 1986 LFS Annual Boost Survey: telephone coverage by social class of current or last occupation and economic activity

	Professional	Intermediate non-manual	Other non-manual	Skilled manual	Semi and unskilled manual
	%	%	%	%	%
i. Working	93	91	87	79	74
ii. Unemployed	84	79	72	60	54
Bases i.	(2 684)	(13 036)	(12 351)	(12 849)	(12 887)
ii.	(60)	(509)	(805)	(1 194)	(814)

Note: Figures include those aged 61 + (unlike Table 1). Category ii excludes those never employed and those not employed in the past three years from whom information on social class was not collected.

2.3. Quarterly Panel Survey

The panel component of the LFS is carried out in every week of the year. Addresses, once selected, are approached five times at quarterly intervals with one-fifth of addresses being replaced each quarter. Interview information from the previous quarter is printed on to the questionnaire for use by interviewers at the next round of interviewing. The set sample for each quarter consists of 20 800 addresses, with a total of 33 280 separate addresses contacted each calendar year. Addresses are selected, using a two-stage design, from a list of all addresses in Great Britain compiled by the Post Office. (Further details of sample design and sampling errors for both components of the LFS are contained in OPCS (1987).)

Telephone interviewing formed part of the panel survey from its inception. Although concern about telephone coverage meant that a mixed mode approach was necessary, the move to telephone interviewing was still felt to be worthwhile for the following reasons:

- i. Cost: The use of telephone interviewing for follow-up interviews is estimated to

reduce the overall cost of the survey by just over 11 %.

- ii. Timeliness: Data entry of telephone interviews can begin within 24 hours of the interviews being conducted whereas there is generally a delay of five to ten days in the receipt of work from face to face interviewers. This speed-up in the processing timetable helps ensure that targets for the production of questionnaires for the next quarter's panel interviewing are met.

As mentioned previously, telephone interviewing is limited to follow-up interviews where permission has been given for the use of the telephone. The effect of this procedure, as Table 3 shows, is that about 70 % of households at the follow-up interview stages are interviewed by telephone as compared with 30 % interviewed face to face. This latter group is made up of an estimated 18 % of households which do not have a telephone and a further 12 % which prefer to be interviewed face to face. Table 4 shows that for those agreeing to be re-interviewed by telephone the response rate is 95 %.

Table 3. *Distribution of interviews by mode on the quarterly panel element of LFS*

Mode of interview	First interview	Follow-up interviews	All interviews
	%	%	%
Telephone	-	70	55
Face to face	100	30	45
Base: full and partial interviews	(12 925)	(47 496)	(60 421)

Note: Figures refer to the year March 1986 to February 1987.

Table 4. *Annual response rate by mode of interview on the quarterly panel element of LFS*

Response	First interview	Follow-up interview		Overall
	Face to face	Face to face	Telephone	
	%	%	%	%
Interview	86	81	95	89
Base: eligible households	(15 087)	(17 468)	(35 221)	(67 776)

Note: 1. Figures refer to the year March 1986 to February 1987.

2. At the follow-up stage non-contacts and refusals are almost exclusively reissued to face to face interviewers.

3. Some categories of refusal are not reissued at later stages. If these are included in the totals the overall response rate, including addresses at all five stages of the survey, would be 81-82 %.

2.4. Annual Boost Survey

The data from the annual boost sample and the panel survey covering the same quarter are added together to produce estimates at both national and regional level. The addresses for the boost are drawn by computer from the same list of postal addresses as is used for the panel survey. A simple random sample is used in more densely populated areas (55 % of the sample) and, for cost reasons, a two-stage design in the remaining areas. The sample also has a rotation element. One-third of the sample is carried forward from the previous year and two-thirds freshly drawn. In total each year's boost sample consists of approximately 53 500 addresses in England and Wales.

Telephone interviewing was introduced on the boost survey in 1985 but was initially limited to the third of the sample which had been included in the previous year's sample. In 1986 a small experiment, reported on in Section 3, was conducted to investigate the possibility of introducing telephone interviewing for newly sampled addresses which make up the remaining two-thirds of the sample. As a result of this experiment a decision was taken to extend telephone interviewing to "new" addresses from the 1987 survey onwards.

The motives for moving interviewing on the boost survey to the telephone differed from those which led to the use of telephone interviewing on the panel survey. The size of the boost survey is such that a larger than

normal proportion of interviewers working on the survey are inexperienced or appointed on temporary contracts. It was felt that the closer supervision provided by a centralised telephone facility would ensure greater control over response rates and data quality. A second factor was the greater ease of recruiting temporary interviewers to an office-based location. In addition some modest cost savings were anticipated.

For the third of the sample rotated forward from the previous year, the telephone number is collected at the first interview. In 1987, 53 % of the addresses in this part of the sample supplied a telephone number. This is considerably lower than on the panel element of the survey and is due in part to a difference in approach. On the panel survey, interviewers actively recruit respondents to the telephone panel whereas on the boost survey no particular reason is given for collecting telephone numbers. For the remaining two-thirds (the “new” addresses), the telephone numbers are obtained in a two-stage process. Postal addresses are first checked by computer against the Electoral Register to identify the names of those living at the address. The names and addresses are then looked up manually in telephone directories. As Table 5 below shows, telephone numbers are only identified for 39 % of addresses. Apart from households which do not have a telephone (18 %), there are losses due to ex-directory numbers (estimated at 12 % of addresses (Collins and Sykes (1987))) and a large number of addresses (31 %) where the matching procedure fails to identify a telephone number. In a further 4 % of cases, the telephone number supplied is for the wrong address or is out of service.

Advance letters are sent to all addresses in the telephone sample. From 1988, advance letters were also introduced on the face to face sample, as it had been found on other government surveys (Clarke, Phibbs, Klepacz, and Griffiths (1987)) that advance letters led to an improvement in response rates of up to 5 %.

Table 5. Linkage of postal addresses to telephone numbers: reasons for failure in linkage for new addresses on the 1987 LFS Annual Boost Survey

Reasons for failure	%	%
Unable to match postal address to telephone number	61	
of which:		
Address does not have a telephone (estimate)		18
Ex-directory (estimate)		12
Other reasons (estimate)		31
Able to match postal address to telephone number	39	
of which:		
Telephone number found during survey to be wrong or out of service		4
No contact made with address		2
Base: Addresses	(35 200)	

Note: Figures relate to the two-thirds of the LFS sample containing freshly drawn addresses.

3. Experiment in Contacting “New” Addresses on the 1986 Annual Boost Survey

3.1. Aims of the experiment

In 1986 a test was carried out of the feasibility of using the telephone to make a first contact with addresses selected for the annual boost survey. The test was designed to detect any differences in the level and nature of responses from the two elements of a planned dual-mode approach – these two elements being the traditional face to face interview and a telephone approach together with the reissue of addresses which had not yielded an interview for a face to face contact.

The test was carried out before any full-scale implementation of first contact telephone interviewing on the annual boost survey be-

cause other survey researchers had experienced problems with response rates and distributions from such an approach.

Smith (1984), Sykes and Hoinville (1985), and White (1987) reported response rates from telephone surveys around 4–10 % lower than on equivalent face to face surveys, although Aneshensel, Frerichs, Clark and Yokopenic (1982), Rogers (1976), and Locander, Sudman and Bradburn (1976) found no differences in rates according to mode.

Turning to response distributions, Jordan, Marcus and Reeder (1980) indicated that telephone respondents were more likely to choose extreme responses, and by way of contrast, both Jordan et al. (1980) and Sykes and Hoinville (1985) noted that “don’t knows” are more common as telephone answers. Groves (1979) suggested that telephone respondents gave fewer and less detailed responses to open ended questions. Both Dillman (1978) and Groves and Kahn (1979) indicated that data collected by telephone may be inferior, with the former pointing to loss of concentration as a particular problem. On the other hand Sykes and Collins (1987), Smith (1984), McDonald (1984), and Clemens (1987) found little difference between telephone and face to face response distributions, with the latter in particular stressing that telephoning offers the possibility of closer quality control on the interviewing process and greater flexibility for respondents to be interviewed at their convenience (by implication reducing hostility).

In summary, the results of comparisons of face to face and telephone interviewing are inconclusive and sometimes contradictory. The subject matter and length of the survey and the region or country in which the survey took place will have affected the findings. It is clear, however, that it would have been rash to assume that telephone and face to face approaches would produce equivalent response rates and response distributions.

3.2. Sample selection and method of analysis

The feasibility test involved the random selection of addresses from those chosen for a first interview in 1986 on the annual boost survey. The addresses were linked to telephone numbers using the method described in Section 2.4. This approach yielded just over 2 000 addresses which were allocated with equal probability for telephone and face to face interviews. The intention (and successful outcome) of this method was that the two groups should not differ in their basic demographic and social characteristics (age, sex, household size, ethnic group, and housing tenure).

In the analysis which follows, the responses from addresses allocated for face to face interviewing are compared with those from addresses allocated for telephone interviewing, even though one-sixth of the latter were eventually interviewed face to face. There are two reasons for using this approach. The first is that the demographic similarity of the two allocations is maintained which would not be the case if those actually interviewed by telephone were compared with those actually interviewed face to face. People at addresses reissued from the telephone group for a face to face interview were distinctive (they were more likely to be single, living alone, renting accommodation, and non-white). The second reason is that we are comparing the two ways in which interviews are, in practice, achieved on the annual boost survey; it is unlikely that reissuing from telephone to face to face interviewing will be dropped.

3.3. Response rates

Of the households allocated to the telephone group, 71 % gave an interview by telephone. This is significantly lower than the 86 % of the face to face group. However, most of those in the telephone sample not yielding an interview were reissued for face to face contact, and 60 % of them (constituting 13 % of the

original telephone group) eventually gave an interview – producing an 84 % response rate from those allocated to the telephone group. This rate was not significantly different from that of the face to face group.

Table 6 shows that heads of household were more likely to act as respondent in the telephone group than in the face to face group. This is a result of two features of the LFS. The first is that most telephone interviews are carried out between 4 p.m. and 9 p.m., whereas most face to face interviews take place between midday and 6 p.m.; particular household members are likely to be contactable at some times and not others, according to their work patterns. The second factor is the acceptance of proxy interviewing on the Labour Force Survey. (Martin and Butcher (1982) give a favourable assessment of the accuracy of proxy responses.) There is no significant difference between the proportions of all interviews carried out by proxy for the telephone group (32 %) and the face to face group

(34 %). However, for the face to face group, proxy interviews were more likely to be carried out with the spouse of the head of household acting as informant (with the head of household as subject) than for the telephone group.

It may be supposed that this pattern reflects the greater likelihood that face to face interviewers will contact the household when people in work will not be at home but non-workers will be at home. By implication face to face interviewers are more likely than telephone interviewers to take proxy information concerning those in work.

The effects of this pattern on response distributions is considered in Section 3.5, though one aspect can be mentioned here. Certain groups in the population may be harder to contact by telephone in the evening than face to face during the day (shiftworkers, for example) and the differential non-response may influence response distributions for particular questions.

Table 6. Distribution of personal and proxy interviews and informant's position within the household (percent)

Information provided	Informant				Number
	Head of household	Spouse	Other	Total	
TELEPHONE SAMPLE					
In person	35	26	7	68	(1 219)
By proxy for others	14	17	1	32	(578)
Total	49	43	8	100	(1 797)
Number	(889)	(764)	(144)	(1 797)	
FACE TO FACE SAMPLE					
In person	33	29	4	66	(1 194)
By proxy for others	12	20	1	34	(606)
Total	45	49	6	100	(1 800)
Number	(810)	(886)	(104)	(1 800)	

3.4. Response distributions

The response distributions for 56 variables were tested, using chi-square, for significant differences between the two allocation groups. There were no significant differences on the basic employment variables in the survey including economic activity, whether employed or self-employed and whether working full or part time. Table 7 shows that on eight variables there were significant differences at the 1 % level, and on a further three, significant differences at the 5 % level.

Table 7. Annual Boost Survey Experiment: variables with significantly different response distributions between telephone and face to face samples

Variable	Significance level
Whether looking for a different job	.001
Relationship of respondent to head of household	.01
Whether working more or less than usual hours last week	.001
How often does paid overtime	.01
How often does shiftwork	.01
Reason for not looking for paid work	.01
Health problems	.01
Whether health problems limit work opportunities	.01
Why seeking part-time job	.05
How often does unpaid overtime	.05
Whether works weekends	.05

As Table 7 suggests and the following discussion demonstrates, several of these variables could be interrelated. Even so, this explanation alone does not convincingly account for the proportion of significant results. Other explanations must be sought. Although, as was stated, one-sixth of those allocated to the telephone group were actually interviewed

face to face, differences in the mode cannot be ignored as explanatory factors (particularly since the effect of including those allocated to the telephone group but interviewed face to face with the rest of the telephone allocation is to dilute the differences in response between those actually interviewed face to face and those actually interviewed by telephone).

Table 8 shows that several of the variables whose distributions differed between the two groups relate to the pattern of the working week. Those in the telephone group were: more likely to work paid or unpaid overtime occasionally rather than never; less likely to work weekends; less likely to do shiftwork; less likely to state that the hours actually worked in the previous week equalled their usual hours worked.

A second set of significant variables shown in Table 8 were concerned with the respondents search for paid work (it should be noted that these three questions were addressed to different, albeit overlapping, groups of respondents). Those in the telephone group were:

1. more likely to answer that the reason for not looking for work was due to not needing or wanting a job rather than as a result of long term sickness or the need to look after the family and home;
2. more likely to have taken part-time work because they did not want full-time work than because they were sick, a student or unable to find full-time work; and
3. less likely, if in work, to be looking for a different job.

In addition, the responses from the telephone sample were significantly more likely to identify a health problem (33 % against 28 %), but of those problems a smaller proportion in the telephone sample were described as limiting the type of work which could be done. The overall proportion for whom health

Table 8. Annual Boost Survey Experiment: differences in percentages in selected categories between the face to face and telephone samples

Characteristic	Percent		Bases	
	Face to face	Telephone	Face to face	Telephone
Occasionally works unpaid overtime	10	13	1 063	1 048
Occasionally works paid overtime	21	27	1 063	1 048
Works weekends	46	41	1 064	1 055
Does shiftwork	14	10	1 062	1 056
Worked fewer than usual hours last week	29	36	991	983
Looking for different job	8	4	1 064	1 056
Doesn't want/need paid work	6	15	398	354
Working part-time because did not want full-time work	57	72	218	236
Has health problems	28	33	1 365	1 349
Health problems limit work opportunities	36	29	375	441

problems were described as limiting the work which could be done was almost identical for the two samples (about 10 %).

3.5. Possible mode effects

In considering some possible explanations for the differences described in the previous section, the emphasis here is on factors which influence response distributions once contact is established. However, the possibility that some of these differences could be related to differential non-response (as suggested in Section 3.3) must not be discounted. We are unable to investigate the characteristics of non-respondents further, but it may be that the differing hours of telephone and face to face interviewing could have influenced the response distributions on questions relating to working patterns. As has been mentioned, telephone interviewers might have had greater difficulty in contacting shiftworkers, whereas face to face interviewers might have encountered problems in reaching those who worked overtime.

We turn now to factors operating once contact has been established. Two possible effects of mode of interview on response distributions will be examined here. The first type is labelled "structural" and refers to procedures peculiar to the LFS design. These are considered to be susceptible to alteration. The second type is labelled "inherent" and refers to effects (some of them mentioned in studies referred to earlier) which are intrinsic to the use of a particular mode of interviewing, and therefore difficult to avoid.

The first of the structural effects to be considered relates to the use of proxy interviews, and the consequent differences between the proportions of heads of households (or people in work) for whom proxy information is provided (as described in Section 3.3.). These differences could be related to differences in response distribution. This hypothesis was tested on the five variables relating to the pattern of work. Responses were categorised according to the person responding and whether or not proxy information was given. The outcome was that the significant differences between samples concerning paid and unpaid overtime and the relationship be-

tween hours worked in the previous week and usual hours were maintained in every category. The differences for weekend working and shiftwork were sustained where the information provided related to the respondent, but not where the head of household provided proxy information concerning someone else. On the shiftwork variable there was also no difference between samples where proxy information was given about the household head.

The outcome of this test suggests that the use of proxy information, and the likelihood of the head of household responding, are not significant in explaining differences between sample groups in response distributions. Other structural factors must be considered.

For two of the questions where significant differences were recorded prompt cards were used for face to face interviews (Appendix). One was the health problems question, where telephone respondents were read each category and asked to indicate whether they suffered from the problem. In effect they were being asked eleven questions, while the face to face respondents, shown a card, were asked one. It is hardly surprising that the telephone respondents were more likely to mention an ailment, and (as the subsequent question revealed) they were more likely to mention an ailment which did not limit the work which they could do.

A prompt card was also used on the question on reasons for taking a part-time rather than a full-time job. Whereas the face to face respondents were shown a card listing all the categories, the telephone respondents were read the categories one by one. The interviewers were told to code the first that applied, and many telephone respondents were not read the complete list. Since they were not, in effect, offered the same choice it is not surprising that the response distributions from telephone and face to face informants differed.

The space available is insufficient for a de-

tailed discussion of possible structural effects on other questions. However, there are few questions with distributions differing significantly by mode for which a structural explanation cannot be offered. The remainder of this section is concerned with possible inherent effects. Again, the discussion focuses on a few of the questions but does not preclude the possibility of inherent effects on others.

The first type of inherent effect is the visual cue. On the question on reasons for not looking for paid work, the code "looking after the family/home" was used more often face to face (37 %) than for the telephone group (29 %), while the latter group recorded "doesn't want/need employment more often" (15 %) than the face to face group (6 %). These two definitions might apply equally well to particular individual circumstances, and face to face interviewers in the respondent's home could pick up visual cues, or indicators of indecision and probe the reason for not wanting employment as being "looking after the family/home."

The second effect – ease of comprehension – is related to the "visual cues" effect. Telephone interviewing tends to proceed at a faster pace than face to face interviewing, and telephone informants may have less time to consider the implications of the question. For example a telephone respondent asked the question "Were you looking for a different or additional paid job or business" might not have time to consider all of its elements ("different," "additional," "job," and "business"), and may be more inclined than a face to face respondent to answer "no" because they were not looking for, say, an additional business.

Finally the tendency for telephone respondents to say that they worked paid overtime and unpaid overtime "occasionally" rather than "regularly" or "never" could be indicative of a non-committal attitude. It has been argued (Dillman (1978)) that telephone respondents feel less engaged by the interview, are

more likely to lose concentration and will tend to give "don't know" or "middle way" answers. On the other hand, it could be argued that they feel less coerced than those interviewed face to face to give a "right" answer of the "yes," "very," "always," "important" type when a correct answer would be "maybe," "slightly," "sometimes," or "don't care."

While inherent effects may be operating on more questions than those discussed in the previous three paragraphs, they are neither large nor frequent enough to cast doubt upon the value of using a mixed mode approach on the LFS. Several of the structural effects discussed are susceptible to modification. The use of prompt cards is to be reduced as a result of this study, and the possibility exists of harmonizing the hours worked by telephone and face to face interviewers.

4. Response Rates on the Annual Boost Survey

The overall response rate for the boost is usually within the range of 80–85 %; this is slightly lower than on the panel survey because of the administrative problems involved in conducting a large boost within a short period. In 1987, the year in which telephone interviewing was introduced for all first contact addresses, the overall response rate was at the low end of the range (81 % for full and partial interviews). This was partly a consequence of administrative difficulties connected with carrying out a large mixed mode project of this type for the first time. Table 9 shows the response rate obtained in 1987. Unlike the 1986 experiment, the response rate for the face to face sample is not comparable with the telephone response rate in that the face to face sample consists of households for

Table 9. Annual Boost Survey: 1987 response rates by initial mode of interview

Response	(a)	(b)	(c)	(d)
	Face to face sample	Telephone sample		
		Before reissues		After face to face reissue
		All tel Nos	Excludes incorrect/out of service Nos	
	%	%	%	%
Interview - Full	81	70	77	77
- Partial	1	1	2	2
Refusal	9	13	14	12
Non-contact	9	4	5	8
Prefers face to face interview	-	1	1	-
Other	-	1	1	-
Wrong address	-	7	-	-
Out of service	-	3	-	-
Base: eligible addresses	(26 116)	(23 064)	(20 857)	(22 780)

- Notes: 1. The face to face sample consists of addresses for which no telephone number could be identified; and, as such, is not comparable with the telephone sample.
 2. Partial interview includes only those cases used in the survey analysis.
 3. Column (d) - 284 addresses reissued for face to face interviewing were identified as ineligible and have therefore been excluded from the base.
 4. Column (d) - Face to face reissues of telephone refusals which were not contacted face to face have been categorised as refusals. Other reissues which were not contacted face to face have been included in the non-contact category.

which a telephone number could not be identified. Column (a) shows the response rate achieved for the face to face sample. Columns (b) and (c) show the response rate on the telephone before any face to face reissues. Column (b) includes telephone numbers found to be incorrect or out of service whilst column (c) excludes these two categories. Column (d) shows the response rate position for the telephone sample after face to face conversion attempts had been made on a mixture of all non-response categories.

Column (b) shows that one of the major causes of the lower telephone response is related to the acquisition of a correct up-to-date list of telephone numbers; 10 % of the telephone sample could not be interviewed because the number supplied was for the wrong address or was out of service. If these two groups are removed from the telephone sample on the grounds that the numbers should not have been included in the first place, column (c) shows a response rate for the telephone sample of 79 %.

Twenty-one per cent of the telephone sample was reissued for face to face interviewing, resulting in an increase in the telephone response rate from 71 % to 79 %. This was disappointing when compared to the previous year's experiment which achieved a response rate of 84 % after face to face reissues. The drop in the response rate was due to a much higher level of non-contacts at the reissue stage. It was felt that this was, in turn, due to problems in administering the much increased volume of reissues.

The results of this section reaffirm the importance of carrying out telephone interviewing in conjunction with reissuing for face to face interviewing in order to ensure that a balanced sample is maintained. Reissuing is needed both for addresses where the telephone number turns out to be incorrect or out of service and for some refusals and others where face to face interviewing is pre-

ferred. (Although in the latter two cases it may be possible to reduce the level of non-response on the telephone through improved training methods and the use of telephone non-response conversion techniques.) In 1987 there were some difficulties in handling the volume of the reissued telephone sample within the restricted time period allowed. Improvements in planning this aspect of the survey in future years are expected to lead to improvements in the response rate. Results for 1988, in which the telephone sample achieved an 83 % response rate and the face to face sample an 84 % response rate, would seem to bear this out.

5. Conclusions

Since 1984, telephone interviewing has been a feature of the British Labour Force Survey. Initially, however, telephone interviewing was restricted to those addresses which had previously been interviewed face to face. This meant that the bulk of the work on the annual boost, for which two-thirds of the sample is freshly drawn each year, was carried out by face to face interviewers; and, as a consequence of its large size, a higher than normal proportion of the face to face interviewers employed were inexperienced or temporary appointments. It was felt that moving more work to the centralised telephone unit would ease the recruitment problem and provide a more controlled working environment. It was therefore proposed to assign all addresses on the annual boost for which a telephone number could be identified to telephone interviewing. In order to evaluate the effect of this proposed change an experiment was undertaken on the 1986 survey.

The experiment consisted of a random sub-sample of those newly sampled boost addresses for which a telephone number had been identified. These addresses were then

assigned with equal probability for face to face or telephone interviewing. Overall, the experiment shows that telephone interviewing for newly sampled addresses can yield an acceptable quality of data. However it has not been possible to attain quite as high response rates by telephone as with face to face interviewing. Telephone interviewing with random samples drawn initially from postal lists yields a relatively high proportion of incorrect phone numbers which have to be reissued for face to face interviewing. Telephone interviewing also has a slightly higher refusal rate; but acceptable response rates can be obtained by reissuing some of the refusals and those stating a firm preference for face to face interviewing.

There were some significant differences in the responses obtained by telephone compared with face to face interviewing but these differences did not affect any of the key demographic or employment variables. The significantly different responses which were found were mainly differences of five percentage points or less. Some of these might be explained by "inherent" mode effects, and a couple could be related to differences between samples in the proportions of heads of households answering and the proportions of proxy interviews taken. The other differences seemed to be related to the question wording, probing, or handling of prompt cards and it may be feasible to revise some of these to achieve greater consistency.

Appendix

Prompt cards used in the British Labour Force Survey

CARD B21

I took a part-time job rather than a full-time job because:

- I was a student/I was at school 1
- I was ill or disabled 2
- I could not find a full-time job 3
- I did not want a full-time job 4
- Other reason 5

E/W
S
NI

CARD B136

Health problems and disabilities

Problems or disability connected with: arms, legs, hands, feet, back or neck (including arthritis or rheumatism)	1
Difficulty in seeing.....	2
Difficulty in hearing	3
Skin conditions, allergies	4
Chest or breathing problems, asthma, bronchitis	5
Heart, blood pressure or blood circulation problems	6
Stomach, liver, kidney or digestive problems	7
Diabetes	8
Depression, bad nerves	9
Epilepsy	10
Other health problems or disabilities	14

E/W
S
NI

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