

FIT3 programme (Fit for work, fit for life, fit for tomorrow)

Survey of businesses: Technical report

Research Study Conducted for the
Health and Safety Executive (HSE)

September 2005 – January 2006

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1 Introduction

This technical report has been compiled by Ipsos MORI Social Research Institute and contains the technical details of a telephone survey among employers, conducted on behalf of the Health and Safety Executive (HSE). The aim of this survey is to provide baseline data which would be used by the HSE to monitor progress of its FIT3 programme (Fit for work, Fit for life, Fit for tomorrow). This program was established by the HSE to deliver its PSA targets for reducing work place injury, ill health and days lost by 2007-2008.

This note contains details about:

- Sample design;
- Pilot of the questionnaire and main fieldwork;
- Data processing and weighting; and
- Issues for consideration in Wave 2 survey.

2 Sample Design

2.1 Random versus quota

This is a quota survey which sets interlocking size and sector quotas (ie. quotas by employee size *within* each sector category). There were 57 sector categories and 4 size bands, giving a total of 228 quota cells (see Table A1 in the Appendices).

A sample ratio of c4:1 was provided for each quota cell. The sample was released automatically to interviewers by the CATI software, depending on which quota cells needed to be filled. The sample was tried up to a maximum of 10 times, at different times and on different days. In addition, interviewers can also set a time for call back, for example, if they are told that the

respondent would be available at the specified time. If after 10 attempts, a positive outcome had not been reached, the sample is placed into a “maximum queue” where it waits to be assessed by the project supervisor in consultation with the project team. The sample is re-released from this queue if the quota cell can not be filled with the remaining sample and no new sample is forthcoming. Thus, in practice, some leads are tried in excess of 10 times. As can also be seen, unlike a face-to-face survey, there is not as much scope for interviewer discretion in terms of who is interviewed.

2.2 Sample frame

This is a survey of business *establishments* rather than enterprise, in other words, business sites rather than organisations as a whole. In surveys of employers there is always a choice between an establishment-based or an organisation-based sample; there are pros and cons to each option, but on balance, an establishment-based sample is more appropriate for this survey since the primary focus of the survey is on “practices” rather than policy (although both are covered in the survey).

There are two main potential sample frames of establishments¹ – the Experian Business Database and the Inter Departmental Business Register (IDBR). Both have their pros and cons as outlined below. The decision to use the Experian Business Database for this survey was driven by timing – to use the IDBR would have meant substantial delays to the fieldwork: to draw the sample and to manually match telephone numbers to the sample as the IBRR has very low coverage of telephone numbers (see below).

The IDBR, however, was used to boost the sample for the public sector (Standard Industry Classification code 75).

IDBR

The IDBR is a list of UK businesses that is maintained by ONS. It is based on inputs from three administrative sources: traders registered for VAT purposes with HM Customs and Excise; employers operating a PAYE scheme, registered with the Inland Revenue; and incorporated businesses registered at Companies House. The ONS Annual Register Inquiry and other surveys are used to identify and maintain the business structures necessary to produce industry and small area statistics.

¹ Establishments are referred to as “local units” on the Inter-Departmental Business Register (IDBR).

A key advantage of the IDBR is that it indicates companies that have been interviewed (drawn from IDBR) for Government surveys, thus reducing respondent burden. In our experience, the IDBR also has better coverage of public sector organisations compared with the Experian Business Database.

However, its key drawback is that the telephone number field is poorly populated. In the past, one of the key weaknesses identified by ONS' review of the IDBR is poor quality contact details at the local unit level which clearly impacts on the ability to match telephone numbers. However, it is possible to enhance the match rate through the use of manual and/or near matching (ie. finding the company that is a close but not necessarily an exact match), but clearly there remains some biases in that match rate tends to be lower among the smallest establishments.

Experian Business Database

This database contains 1,935,050 business records, including the self-employed, captured from a number of sources including: Companies House data; Thomson Directories; and Yell Data. The key advantages of using this source are:

- It has better coverage of the smallest establishments compared with the IDBR;
- It has telephone numbers - therefore, no further matching is required; and
- In our experience, the database is current and relatively accurate - up to 120,000 record validations are conducted each month.

A key disadvantage of this sample frame is that it is increasingly being used in social surveys and this can have a negative impact on response rate in sectors where the population is small. This is especially the case when surveys are commissioned close together and/or they target similar audiences. Many social surveys also tend to over-sample large employers because they are "rare" (and therefore would not be picked up in sufficient numbers unless they were specifically targeted), and this increases the probability of these employers being selected to take part in surveys. There are currently a number of social surveys that use this sample frame – the largest scale is the National Employer Skills Survey comprises around 30,000 interviews with establishments in England.

2.3 Sample size & structure

The overall target sample size was 6,000 interviews. There were also specific sector targets – these targets were driven by the need to achieve minimum numbers of interviews in sectors considered by HSE to be most relevant to the activities of the FIT3 programme. Overall targets were also set for each size band. Within sector, the target number of interviews was set to be proportionate to employment within that sector. This was done so that larger establishments would have a greater probability of selection. A sample ratio of 4:1 was supplied. In addition, a booster sample of public sector, drawn from the IDBR, was also provided (see section 4.3 for a full breakdown of the sample outcome).

Self-employed businesses were excluded from the survey – that is, businesses without employees on the Experian Business Database were excluded prior to sample selection. The sample covered establishments in Great Britain.

Table 2.3 shows the overall target and achieved number of interviews by broad sector and size band. The last two columns show the actual profile for employment and local units (based on the IDBR, March 2005). As can be seen, the actual quotas set and interviews achieved differ to the national profile in a number of sectors (and to a lesser extent, size band) which means that the final survey data had to be weighted to correct for these differences (see section 5.2).

<i>Table 2.3: Targets, achieved and profile</i>		Quota (N)	Interviews		Profile	
			Actual (N)	Actual (%)	Employment (%)	Units (%)
SIC 2003 (2 digit)	SIC Description					
01-05	Agriculture, Hunting/Forestry & Fishing	200	145	2.42	0.94	2.34
10-14	Mining & Quarrying	50	62	1.03	0.15	0.13
15-37	Manufacturing	747	817	13.62	12.35	7.45
40-41	Electricity, Gas & Water Supply	3	13	0.22	0.38	0.12
45	Construction	750	680	11.33	4.5	7.42
50-52	Wholesale & Retail Trade & Repairs	900	921	15.35	17.11	20.81
55	Hotels & Restaurants	200	206	3.43	6.29	7.60
60-64	Transport, Storage & Communications	425	419	6.98	5.77	3.90
65 & 66 & 67	Financial Intermediation	200	198	3.30	4.12	2.80
70-74	Real Estate, Renting & Business Activities	575	552	9.20	16.88	28.32
	Public Administration & Defence; Compulsory					
75	Social Security	500	371	6.18	5.73	1.46
80	Education	350	381	6.35	8.6	3.23
85	Health & Social Work	775	916	15.27	11.93	6.27
	Other Community, Social & Personal Service					
90-93	Activities	325	319	5.32	5.25	8.15
	GRAND TOTAL	6,000	6,000	100.00	100.00	100.00
Size band	2 to 4	500	641	10.68	10.69	63.05
	5 to 49	2,355	2347	39.12	35.22	32.84
	50 to 249	1,059	1460	24.33	26.77	3.55
	250+	2,086	1552	25.87	27.32	0.56
	GRAND TOTAL	6,000	6,000	100.00	100.00	100.00

2.4 Sample quotas

Interlocking size and sector quotas were used to monitor the achieved sample. The quotas were monitored using the size and sector classification recorded on the sample database. However, in our experience around 20% of employers disagree with the sector classification held on the Experian database. Consequently, the following procedures were employed to verify the exact SIC for the establishment:

- Firstly, interviewers asked the respondent to verify whether the SIC description contained on the Experian Database is correct by reading out the full SIC description for the establishment; and
- Secondly, employers who disagree with this SIC description were asked to describe the nature of their business at that particular establishment. This information is recorded in full (as verbatims) and, where possible, the interviewer also coded it “live” to a SIC category. Thus in the analysis, we are able to use the actual size and sector information collected from the respondent.

The reason why the quotas were not monitored using actual responses (as opposed to classification held on the sample) is that it is difficult to code SIC accurately “live”. Accuracy can be improved by employing a series of questions to drill down to the lowest level SIC but this is a time consuming exercise which would limit the time available for other key issues that the FIT3 baseline survey needed to cover. Monitoring SIC quotas using actual responses is also very costly as it involves screening out employers who are eligible according to the database, but ineligible once we actually speak to them.

3 Questionnaire development

3.1 Questionnaire content

The questionnaire was developed by HSE in consultation with Ipsos MORI. The questionnaire comprises 8 core sections plus 11 programme specific sections, as detailed in Table 3.1 below. A copy of the questionnaire is appended.

<i>Table 3.1: Questionnaire topics</i>		
	Name of Module/Section	Base
	Company profile	All
A	Risk priorities	All
<i>Programme-specific sections B-LV:</i>		
B	Stress	<p>Each respondent were asked a maximum of 2 programme-specific sections in addition to the core sections (if they are identified as a risk to their workers in Section A)</p> <p>The core sections are: K, and LV.</p>
C	Slips and trips	
D	Hand and Arm vibration	
E	Noise	
F	Falls from height	
G	Workplace transport	
H	Skin problems	
I	Respiratory conditions	
J	Musculoskeletal disorders	
K	Cancer	
LV	Violence	
M-R	Inspection; Sickness absence; Health & Safety policy; Information and advice; Worker involvement	

3.2 Pilot

A detailed pilot comprising 100 interviews were conducted prior to the main fieldwork. The pilot tested the following:

- The questionnaire: length, comprehension and quality of data (ie. respondent's ability to provide the information required); and
- Identification of the most appropriate person.

The main issue arising from the pilot was the interview length which was too long at around 30 minutes. Although minor cuts to the questionnaire were possible, this alone was insufficient to reduce the length substantially. This poses a challenge for the main survey in that it was not desirable to increase the interview length beyond 20 minutes as this would over burden employers but, at the same time, it was necessary to achieve a minimum number of interviews for each programme specific section to enable detailed analysis.

3.3 Selection of programme-specific sections

For the main survey, it was agreed that a cap on the number of programme specific sections would be imposed to reduce the interview length and burden on employers – especially large employers who are most likely to qualify for the programme specific sections. An innovative approach was devised to randomly select the sections that employers answer whilst, at the same time, ensuring that the target number of interview by section was met. This approach comprised as follow:

- At the beginning of the interview (section A in Table 3.1), employers were asked to state which, if any, of the 13 potential health problems or accidents affect workers at their establishment. All those who mentioned risks associated with Cancer and Violence were routed to the appropriate sections in the questionnaire. These were deemed core sections in that everyone who mentioned them in Section A is asked further questions about them. This is because it was felt that incidences of these risks are likely to be rare and so this approach was needed to ensure sufficient number of responses in these sections. As fieldwork progresses, it became clear that some of the *random* programme specific sections would need to be treated as core in order to meet their interview target. These sections were: Hand and Arm vibration; Noise; and Respiratory conditions.

- The remaining programme specific sections were capped at two – that is, CATI was programmed to select a maximum of two further programme specific sections for interview. Selection was done as follow: firstly, CATI selected the sections that were the furthest from meeting their target; secondly, it selected up to two programme specific sections from this more limited list.

Table 3.3 shows: the distribution of “risks” mentioned by respondents in Section A, the risks that were selected (as described above), and the ratio of risks selected to the total “eligible” for selection.

Table 3.3: Ratio of risks selected to total eligible risks

Risks	All eligible	Selected	Ratio:1
Stress	3,571	1,675	2.13
Slips and trips	4,002	1,717	2.33
Hand and Arm vibration	1,388	1,186	1.17
Noise	1,433	1,091	1.31
Falls from height	2,293	1,465	1.57
Workplace transport	2,114	1,404	1.51
Skin problems	2,210	1,485	1.49
Respiratory conditions	1,370	1,108	1.24
Musculoskeletal disorders	4,171	1,533	2.72
Cancer	760	n/a	
Violence	2,091	n/a	

4 Fieldwork

The telephone survey was conducted by MORI Telephone Surveys (MTS) and Continental Research. Both are members of the interviewer Quality Control Scheme (IQCS) recognised by the Market Research Society. In accordance with this scheme, the field

supervisors listened in to at least ten percent of the interviews and checked the data entry on screen. All data processing was undertaken by MORI Data Services.

4.1 Respondent

The interviews were conducted with “the person with overall responsibility for health and safety *at the establishment*”. This was the description used by interviewers to identify the person for interview. This is a tried and tested description used in a number of surveys conducted for HSE and, on the whole, employers are able to identify the most appropriate person. Table 4.1 gives a breakdown of respondents’ job titles. As would be expected, interviews with dedicated health and safety personnel were more common in medium to large establishments (with 50+ staff), whilst in smaller establishments, the interviews were more likely to be with staff holding a range of job titles.

<i>Table 4.1: Job title of respondents</i>	%
Other Manager/supervisor/Head of Dept	30
Health & Safety Manager/Advisor	29
Owner/Director	19
Company Secreatry/Administrator	5
Operations/Facilities Manager	4
HR Manager/Officer	2
Specific job titles (Dentist, Surveyor, Accountant etc)	2
External Consultant/Advisor	1
Other	8
Total	100

4.2 Main survey

In total, 6,015 interviews were conducted between 26 October 2005 – 6 January 2006. The average interview length was 26 minutes. The average number of sections completed was 2.6 out of a possible 11. The distribution of sections completed is shown in Table 4.2.

Number of sections completed	N	%
None	742	12
One	650	11
Two	1,758	29
Three	1,484	25
Four	605	10
Five	350	6
Six	154	3
Seven or more	272	5
Total	6,015	100

Prior to starting fieldwork, interviewers were fully briefed by members of the MORI project team. They also received full written instructions about all aspects of the survey which are appended, along with a copy of the letter that was sent to respondents who requested more information about the survey.

4.3 Response rates

As this is a quota survey, it is not possible to calculate a response rate in the same way as a random probability sample. Instead detailed breakdown of the sample supplied is presented in Table 4.3 below.

Overall, 23% of the total sample issued resulted in an interview. This rises to 39% when considering only the sample where a definite outcome is known (see the last column of Table 4.3 which includes definite outcomes only – ie. where actual contact had been made with the respondent/organisation). This latter figure is lower than what we would *normally* expect to see on a quota survey such as this (which is in the region of 50%), but is becoming more common as employers are increasingly being contacted to take part in surveys.

The response is lower than achieved in the 2005 Workplace Health and Safety Survey (WHASS) – 63%. However, the two response rates are not directly comparable. Key differences between the two surveys which would explain these differing response rates are:

- WHASS covers establishments with five or more employees only. Response rate tends to be lower among micro-establishments which are included in the FIT3 survey but not in WHASS;
- WHASS uses the IDBR which has restricted access (ie. can only be used for Government surveys), unlike the Experian Business Database which is a commercial database. The IDBR also has the facility to exclude employers who are recently sampled;
- WHASS adopted a two-stage approach to sample generation: establishments were firstly contacted by telephone to identify the name of the most appropriate person for interview. A personalised letter was then sent to this individual prior to fieldwork, explaining the purpose of the survey. MORI used a similar approach in the Employers' Pension Provision 2000, and achieved a response rate of 71% among organisations with 1 or more employees, drawn from the IDBR.

Thus, HSE may want to test this approach in FIT3 Wave 2, although it obviously has both cost and time implications.

<i>Table 4.3: Final sample status</i>	Total sample	% Total sample	With outcome	% with outcome
Achieved interviews	6,015	23	6,015	39
Bad tel/no answer	3,907	15	n/a	n/a
No longer at address	191	1	n/a	n/a
Over-quota/not required	6,866	26	n/a	n/a
Max number of tries – varies but min is 10	22	0	n/a	n/a
Interview stopped but respondent willing to reschedule	124	0	124	1
Respondent unavailable during fieldwork	1,278	5	1,278	8
Refusal by establishment	242	1	242	2
Refusal by respondent	7,297	28	7,297	47
Respondent quit interview	514	2	514	3
Total	26,456	100	15,470	100

Reasons for refusing to participate in the FIT 3 survey are in line with what one would expect in a business survey and include:

- Do not have the time/Too busy;
- Company policy;
- Get too many research calls; and
- Not interested in subject matter.

However, there were a small number of mentions which are specific to this survey:

- Reluctance to talk about health & safety over the telephone and/or with external parties;
- Reluctance to participate without Head Office consent which was denied for the reason described above; and
- Insistent that there is no-one at the site who deals with health & safety (i.e. it is all done at the head office/by external consultants).

5 Data processing & weighting

5.1 Coding

Substantial coding was undertaken to reduce the proportion of “other” responses to a minimum of 5%. It is anticipated the volume of coding required will be significantly less in Wave 2, as much of the extra codes can be incorporated into the main questionnaire. The following questions have been coded/back-coded:

- Section B: b2, b9, b12
- Section C: c1, c6

- Section D: d3, d7, d13, d15, d17
- Section E: e1, e3, e7, e13, e15, e17
- Section F: f6, f10
- Section G: g1_other; g6, g10
- Section H: h3, h4, h5, h16
- Section I: i2, i3, i4, i5, i6, i7, i9a, i20, i23, i24, i27, i28
- Section J: j5, j9, j12
- Section K: k2, k3, k9, k12, k13, k14
- Section LV: lv3
- Sections M- R: m2, n2, o5, o7, p3, p6, r3
- Respondent's job title.

5.2 Weighting

Corrective weights were applied to the final survey data to take account of the sample design (which over-represented some sectors/size bands and under-represented others) and differential response rates.

Two sets of interlocking size by sector weights were applied (as in the sample design). The first uses profile data for units (ie. number of establishments in GB) and the second uses profile data for employment (ie. number of employees in GB). Both sets of profile data were sourced from the March 2005 extract of the IDBR which included counts for both VAT and/or PAYE based units². The computer tabulations provided to HSE show the data weighted by employment only.

The SPSS datafile provided to HSE contains both unit and employment weights. In addition, it also contains separate weights for each of the programme-specific sections included in the random selection (sections B-J of Table 3.1).

The section weights were derived because **not all** of the employers who mentioned a particular risk were asked further questions about that risk (see section 3.3). Thus it was necessary to ensure, through weighting, that the subset of employers who were

² Sole Proprietors and Partnerships with zero employment were excluded from the count as these groups were not included in the survey.

selected to answer the programme-specific sections were representative of all employers who reported that their employees experienced that risk in terms of their sector and size profile, as well as their assessment of the extent to which the risk affected their workers (QA3) and its severity (QA4) – see attached questionnaire in the Appendices which shows that QA3 and QA4 were asked in relation to each risk mentioned at QA1.

In summary, the section weights were derived using a combination of sector and size data for all those who specified the risk at QA1, and their associated responses at QA2-3. The following procedures were used to derive the weights:

1. Filtering on those who said "Yes" at QA1 for that specific risk;
2. Running frequency tables for these respondents on Size*Sector, QA2 (prevalence within company), and QA3 (level of risk); and
3. Using the SPSS rim-weighting macro to create a weight variable to weight those who are asked about stress to all those who mentioned stress at QA1, using the outputs described in 2) as weighting targets.

5.3 Statistical reliability and design effect

As this is not a random probability sample, statistical reliability cannot technically be applied. However, presenting the intervals would still be useful in offering a general indication of the accuracy of the data.

It should be noted that a sample which is weighted is less accurate (i.e. has a larger standard error) than an unweighted sample of the same size. The effect of this weighting, therefore, needs to be taken into account when considering statistical reliability. The design effects and effective sample sizes – overall and for each section are as follow:

Table 5.3: Design effects and effective sample sizes

Sections	Unweighted Base	Design Effect (DE)	Effective Sample Size
Stress	1,675	1.6123	1,039
Slips and trips	1,717	1.5296	1,123
Hand and Arm vibration	1,186	1.6749	708
Noise	1,091	1.7035	640
Falls from height	1,465	1.6498	888
Workplace transport	1,404	1.7218	815
Skin problems	1,485	1.5762	942
Respiratory conditions	1,108	1.5170	730
Musculoskeletal disorders	1,533	1.4328	1,070
Overall	6,015	1.5066	3,992

6 Outputs

A set of computer tabulations analysing the response to each question by two sets of cross-break variables have been produced along with an SPSS disk of the data. Data contained in the computer tables have been weighted by employment. The variables contained on the cross-break of the computer tables are as follow:

<i>Table 6.1: Cross-breaks</i>		
Overall heading	Column heading	Definitions
<i>Size of firm</i>	Less than 10 10-49 50-99 100-249 250+	Size at S1
<i>Sector</i>	Agriculture, Forestry, Fishing Manufacturing Electricity, Gas & Water Construction Wholesale and Retail	SIC codes 01 02 05 SIC codes 10 36 (+50) SIC codes 37 40 41 (+90) SIC codes 45 SIC codes 51 52

Overall heading	Column heading	Definitions
<i>Sector (cont)</i>	Transport Services Real Estate Health & Social Work Public/Education	SIC codes 60 64 SIC codes 55 64 66 67 71 72 73 74 91 92 93 SIC codes 70 SIC codes 85 SIC codes 75 80
<i>H&S Inspection in last year</i>	Yes No	M1 code 1 M1 code 2
<i>Written H&S policy</i>	Yes No	P1 code 1 P1 code 2
<i>Involve workers in H&S management</i>	Yes No	P5 code 1 P5 code 2
<i>Assess workers' health</i>	Yes No	O1 code 1 O1 code 2

The SPSS data contains the following weights:

- Overall weight by employment
- Overall weight by units
- Section weights as outlined above – section 5.3.

7 Issues for consideration in Wave 2 survey

HSE has asked that we consider the following issues for Wave 2:

- Switching from quota to random probability sampling; and
- Using the IDBR instead of Experian Business Database.

7.1 Switching from a quota to random probability sampling

Section 2.1 describes the process for managing a quota sample in the context of a telephone survey. The difference between a quota and random approach is that fewer sample leads would be issued to start with for a random survey. The refusals and invalid sample for this survey was 47% (see Table 4.2). Thus we would provide leads in the ratio of c2:1, so that each lead would have to be worked harder. Because of differential response rates between different groups of employers, booster samples would have to be released in stages to ensure that sufficient number of interviews is achieved in the subgroups that are of interest. These factors combined make a random approach more *expensive* and *time consuming*, but it might - according to standard theory - provide a more accurate reflection of the population.

To switch from a quota to random approach for Wave 2 would jeopardise the ability to compare findings between waves – although there is a question on how much change, if any, one would expect to observe in six months which is the time gap between waves 1 and 2. Comparability between waves is not possible because we can not be confident that observed changes are real (or due to a change in methodology). Although corrective weighting can be applied, these refer only to known characteristics such as size, sector and location. They do not correct for unobserved differences between the two survey populations.

Thus the decision on whether to switch or not is dependent on the followings:

- The importance of having reliable overall estimates for the employer population – in particular, on attitudinal measures which are more difficult to correct through demographic weights alone (ie. size and sector). If this is important, then a random sample is most appropriate.
- The extent to which one would expect to see change over a six month period. If minimal change is anticipated, and the above is important, then it would make sense to switch to a random approach.
- The extent to which other changes to the design are being considered – such as changing the sample frame (see section 7.2 below). If other changes are being considered, then it would be worthwhile to make all the changes at the same time.

Finally, there is the issue of costs and timing which also need to be considered: random sample surveys tend to be more costly and require a longer fieldwork period.

7.2 Using the IDBR instead of Experian Business Database

We understand that you are keen to use the IDBR for FIT3 Wave 2 and we fully recognise its appeal in terms of completeness and rigorous validation procedures. In addition, we would expect this sample frame to be less “over-used” than the Experian Business Database and should, therefore, help boost response rate. As mentioned, if there are plans to change the survey approach from quota to random, then it would make sense to implement both changes at the same time.

However, should HSE wish to consider a change in sample frame only (and not a change in methodology), then our ability to compare the findings between Waves 1 and 2 will be dependent on knowing the *scale* and *scope* of any differences between the businesses listed on the Business Database and those listed on the IDBR (although, as already mentioned, the extent to which this is a pertinent issue is also dependent on whether any change is anticipated between waves 1 and 2 given the short time gap). This would include detailed analysis of establishments on both databases by size, sector and location – both pre- and post-telephone tracing in the case of IDBR.