



Comparison of time use data from pre-coded diaries and fully-written diaries

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Abstract

Large scale time use surveys such as the Office for National Statistics (ONS) UK 2000 Time Use Survey provide valuable data but are expensive. Self-completion diaries are left with respondents who *inter alia* write in descriptions of their activities over two full days. These written descriptions of activities are later given codes from a coding frame of about 250 activities.

ONS has also carried out a lower cost option for a time use survey. A diary with pre-coded activities was administered as part of an existing Omnibus survey in July 2001, whilst the UK 2000 TUS was still in the field. Respondents were interviewed and asked to describe their activities on the previous day, and interviewers assigned these on the spot to one of 33 activity pre-codes. The interview typically took about 15 minutes to administer.

Pre-coded diary surveys are valuable in their own right as time use surveys, but they would be more valuable if their results could be reconciled with those from a full-scale TUS. They could, for instance, confirm the continued relevance of data several years old from a full-scale TUS.

The results from the two surveys were comparable for the main categories of activity. There were differences at the detailed code level, due to differences in interpretation of the codes. For instance, the distinction between 'other leisure activities' and 'sport/exercise' on the pre-coded diary was not clear, and the pre-coded diary may have placed some items as 'other leisure activities' (eg walking/ swimming) which the full-scale TUS would code as 'sport/exercise'.

Additionally, there is some evidence that the pre-coded diaries provided more representative data for the elderly (because the elderly found an interviewer administered diary easier than a self-completion diary).

Background and Aims

As well as getting detailed information regarding time use collected every five or ten years from large scale surveys such as the UK 2000 Time Use Survey, users of time use data would also like to track changes in time-use over time, perhaps with smaller-scale and cheaper surveys. To this end a pre-coded time use diary was administered as part of the July 2001 ONS Omnibus survey. Although data from such a survey is valuable for analysis in its own right, it would be more valuable if the results could be compared and reconciled with those from the full-scale TUS.

The main aim of this paper is therefore to compare the data from the pre-coded (Omnibus) diary with that from the fully-written (full-scale TUS) diary, to explain differences, and to make proposals to reconcile differences in any future pre-coded time use survey.

Descriptions of each survey

See Appendix A1 for comparisons of the two survey designs and Appendix A2 for examples of the diary pages. In essence, the Omnibus was an interviewer administered diary with 33 pre-coded activity descriptions, while the full-scale TUS was a self-completion diary with the respondent writing in descriptions of activities.

Survey coverage

The full-scale TUS was carried out in GB and Northern Ireland, while the Omnibus was carried out in GB only (excludes NI). So that the coverage of the full-scale TUS and Omnibus is consistent, we have carried out comparisons for GB only.

Limitations of the Omnibus data

There were a number of characteristics of the Omnibus data which complicated comparisons with the full-scale TUS:

- (a) Editing
The data from the full-scale TUS (fully-written descriptions) was thoroughly edited and weighted for non-response. In comparison the Omnibus (pre-coded) data had only the most cursory of editing (ie was it fit to be keyed?).
- (b) Weighting
The data from the full-scale TUS was weighted to compensate for non-response. In contrast the Omnibus had limited weighting. There was weighting to compensate for selecting one person per household for the survey, but there was no weighting for non-response.
- (c) Survey periods
The 'July' Omnibus in fact ran from 13 July to 9 August 2001. The same dates were picked for the full-scale TUS for both 2000 and 2001 (most were in 2000). The comparisons therefore do not cover exactly the same period - both survey results are for the period 13 July to 9 August, but most are in different years. Additionally the period chosen for the Omnibus survey is a volatile one, when schools are breaking up for the summer and holidays starting.

In summary therefore, the key differences between the full-scale TUS and Omnibus are that the full-scale TUS has fully written descriptions, it is self-completion, and the data is edited and weighted. The Omnibus is pre-coded, interviewer-administered, and the data is unedited and only partially weighted.

Terminology

Throughout this report we will refer to the self-completion, interviewer-administered etc survey simply as the 'Omnibus', and the 'fully written, self-completion' etc survey as the 'full-scale Time Use Survey (TUS)'.

Full sample comparisons

The first comparisons carried out were between the whole samples of full-scale TUS and Omnibus. This showed that the results for the full-scale TUS and the Omnibus were generally comparable, but there were large differences in the amount of time spent on sleep and work/study.

These differences were too large to be caused by sample variation. The most likely causes were the difference in the characteristics of the people in each sample (eg the Omnibus had more retired people, fewer employed, and more weekdays), and perhaps the limited editing of the Omnibus and the non-exact match of the survey periods (which were at a volatile time of the year).

It wasn't practical at this stage to weight the Omnibus to compensate for the different characteristics of those sampled. Instead we decided to look at sub-categories of people in the sample. This was done out of necessity, but it did provide some unexpected insights into the way the Omnibus and full-scale TUS surveys performed.

Selection of sub-categories for comparison.

We need sufficient people in a sub-category in order to make comparisons (see Appendix A3). By far the largest sub-category is people in employment (comprising about 60% of the full-scale TUS sample), and we will look at these for weekdays and weekend separately. There are fewer retired (19% of the full-scale TUS sample), but enough for comparisons, and we will look at these for weekdays. An additional reason for including the retired is that it is important that we should look at someone other than the employed.

The categories of person which we will examine are therefore:

- 1) Employed - weekday
- 2) Employed - weekend
- 3) Retired - weekday

Structure of the paper

The paper comprises three main sections (one for each of the three categories of person identified above), followed by the conclusions and then finally the appendices. Within each section we compare time use as measured by the Omnibus with that measured by the full-scale TUS for that particular category of person.

Section 1: Employed, on weekdays: survey results compared.

- first results are compared for broad category of activity
- then results are compared for detailed category of activity

Section 2: Employed, on the weekend: survey results compared.

- comparisons for broad category of activity only

Section 3: Retired, on weekdays: survey results compared.

- comparisons for broad category of activity only

Section 4: Conclusions and recommendations.

Appendices: Much of the detail is relegated to here.

1 Omnibus and Full-scale TUS compared - Employed, on weekdays

1.1 Time use by broad category of activity

Table 1.1 below shows time use by the employed on weekdays, as measure by the main Time Use Survey and on the Omnibus. Note we include both full-time and part-time employed. It also shows the number of minutes difference between the two measures, and the number of standard errors difference. The statistical rule is that if the full-scale TUS and Omnibus are measuring time use for the same population in the same way, we would expect the sample means to be within two standard errors of each other 95% of the time.

Table 1.1: Average time spent on MAIN activities each day

- all employed (aged 16 yrs or more)
- weekdays only

	Full-scale Time Use Srvy - GB - July/August	Omnibus - July 2001	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>number of standard errors</i>
Sleep	484	483	1	0.2
Eating	78	79	(- 1)	0.3
Personal care (wash/ dress)	44	42	2	1.2
Paid work & study	341	340	1	0.1
Housework & childcare	153	154	(- 1)	0.1
- childcare (own children)	23	25	(- 2)	0.4
- other housework	130	130	=	0
Leisure	231	235	(-4)	0.5
- voluntary work	9	10	(- 1)	0.4
- social/ 'time out'/ ents	66	64	2	0.3
- sport/ hobbies	27	28	(- 1)	0.3
- TV/ media	128	134	(- 6)	0.9
Travel	101	87	14	2.9
Computing/ internet * (secondary activity)	N/A	8	8	N/A
Not spec/ other specified **	8	12	4	N/A
TOTAL TIME	1440	1440		

Number in sample (weighted) 546

640

Nmbr in sample (unweighted) 512

580

* Computing was a separate category **only** on the Omnibus, and it was supposed to be recorded **only** as a secondary activity. The computing recorded here is therefore an error. It is likely that some of this would be coded as 'hobby'.

** For the Omnibus this category is mainly 'other specified', and is for activities not covered by the other pre-codes. For the Full-scale TUS this is mainly 'not specified'.

Results

There is remarkable agreement between the time use measured by the full-scale TUS and that measured by the Omnibus for almost all types of activity. All are within just a few minutes of each other. The only exception is the measure of travel. The Omnibus records 14 minutes less travel than the full-scale TUS. This difference is significant (ie greater than two standard errors). A similarly low measure of time spent travelling has also been found on other Omnibus surveys. We will look at this further below.

Sample Characteristics

Appendix 1.1 compares the characteristics of the Omnibus and full-scale TUS samples of employed (for July/Aug, and for weekdays only). The samples are similar in many respects, but there are differences eg male/female split, day of week, age distribution. We looked at some re-weighting of the Omnibus to smooth out these differences, but they had very little effect on the time use figures. The Omnibus figures in the table above therefore remain unadjusted.

1.2 Time use by detailed category of activity

With such good agreement for the major categories of activity, it is worthwhile comparing time use figures for the most detailed categories of activity where the Omnibus and full-scale TUS activity codes map on to each other.

1.2.1 Voluntary work

This breaks down into the following finer categories:

	Full-scale TUS	Omnibus	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>no. of stndrd errors</i>
Formal (for organisations)	1	2	(-1)	1.1
Other hhlds - care for children	2	6	(-4)	2.2
Other hhlds - care for adults	1	2	(-1)	1.4
Other hhlds - other	2	N/A	2	N/A
Religious/ other meetings	3	0	3	2.9
Sub-total: all voluntary work	9	10	(-1)	

The amount of time recorded in each voluntary work category is small and small differences can easily be significant. The Omnibus records significantly more time on care for children (although that is just 4 minutes more). This is no doubt caused by the limited number of pre-coded categories on the Omnibus. The Omnibus has no pre-coded category corresponding to the full-scale TUS category 'Other households - work other than care for adults or children'. It would seem probable that Omnibus respondents are placing this time use under 'care for children', as the nearest category.

The Omnibus also records 3 minutes more time spent at religious and other meetings (this comprises mainly visits to church) than the full-scale TUS records - a small but statistically significant difference. This category is clearly worded on the Omnibus, but appears to get overlooked in its present location.

1.2.2 Social/ 'time out'/ entertainment

This breaks down into the following finer categories:

	Full-scale TUS	Omnibus	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>no. of stndrd errors</i>
Going out with friends/family	27	32	(-5)	1.2
At home with friends/ family	11	23	(-12)	4.1
Telephone/ write to friends	5	6	(-1)	0.9
Sub-total: all social	42	61	(-19)	3.8
Entertainment	5	3	2	1.0
Resting/ time out	19	N/A	19	N/A
Sub-total: all social/ entertainment/ time out	66	64	2	

The crucial point here is that the Omnibus does not have a code for '*resting/ time out*'. The full-scale TUS does have such a code, and it is used for time spent at home doing nothing, reflecting etc. It is a well used code - recording 19 minutes of time on the full-scale TUS.

Apart from the '*resting/time out*' code, the largest difference at the finer level is that the Omnibus records 12 minutes more time '*at home with friends/family*'. It seems probable that on the Omnibus this time is instead recorded under '*at home with friends/family*'. For any future Omnibus we would need to clarify where '*resting/ time out*' should be coded, or add an extra category to the Omnibus.

Coding social life

It is worth noting here are the different ways in which the full-scale TUS and Omnibus code social life. On the full-scale TUS, the activity code also includes a 'who with' element (distinguishing between household members and visitors), and then there is a separate code for location. On the Omnibus, the activity code includes the location element (at home, outside the home), but doesn't distinguish 'who with' ie with family or with friends. In the comparisons above the full-scale TUS categories have been combined to match the Omnibus categories.

1.2.3 Sports/ Exercise/ Hobbies, Games & other leisure activities

This breaks down into the following finer categories:

	Full-scale TUS	Omnibus	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>no. of stndrd errors</i>
Sports & exercise	14	11	3	1.2
Hobbies, games & other leisure	13	17	(-4)	1.4
Sub-total: sports & exercise/ hobbies & games	27	28	(-1)	

The precise descriptions for these categories on the Omnibus are '*playing sports, exercising*' and '*hobbies and other leisure activities*'. The table above shows that the Omnibus records more time on hobbies/leisure and less time on sports/ exercise (although the differences are not significant) This same trend has been seen for similar tables produced for other person categories. It seems likely that this is caused by a lack of clarity about the definitions of these categories, with the full-scale TUS recording an activity as a sport when the Omnibus might treat it as a leisure activity. We can't be sure which activities might be treated differently, but the full-scale TUS treats walking, swimming and picking berries as sport/ exercise, which might conceivably be treated as leisure activities by the Omnibus.

1.2.4 TV & other media

This breaks down into the following finer categories:

	Full-scale TUS	Omnibus	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>no. of stndrd errors</i>
Reading	18	17	1	0.4
TV & Radio *	110	117	(-7)	1.1
Sub-total: TV & other media	128	134	(-6)	

* Note the full-scale TUS separates TV and radio, whereas the Omnibus combines them. We have therefore of necessity followed the Omnibus when creating categories for comparisons.

The measures for both 'reading' and 'TV/ radio' are close, and within two standard errors.

Although each survey provides similar measures of TV use, we might have expected some survey differences here. We would expect that the recording of TV watching could be quite sensitive to what else is going on at the same time. It is often quite a passive activity (eg a TV is on in the background) and could easily be relegated to a secondary activity by other activities (indeed, it is one of the most common secondary activities). For instance, are a group of people in room with a TV watching TV or socialising with each other?

1.2.5 Other housework

This breaks down into the following finer categories:

	Full-scale TUS	Omnibus	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>no. of stndrd errors</i>
Food management	42	39	4	1.0
Cleaning	26	21	5	1.7
Wash/ iron	10	9	1	0.6
Repairs/ gardening/ pet care	22	31	(-9)	2.4
Shopping & services	29	30	(-1)	0.3
Care - for own adults	0	0	=	0
Sub-total: Other housework	129	130	(-1)	

Although there is good agreement between the Omnibus and the full-scale TUS for the major category 'housework', there are differences within that - particularly for 'repairs/ gardening/ pet care.' Some of the other differences could be due to sampling variation, but it is also possible that this could reflect Omnibus respondents placing activities in 'repairs/ gardening/ pet care' which the full-scale TUS places in 'food management' or 'cleaning'.

1.2.6 Internet and computer use.

The Omnibus was supposed to record internet and computer uses only as a secondary activity, and code the main purpose of the computer use as the main activity. For instance, if a person shopped on the internet, '*shopping*' should be recorded for the main activity, and '*accessing the internet*' as the secondary activity. Similarly for computer games, '*hobbies and other leisure activities*' should be recorded as the main activity and '*using a computer*' as the secondary activity.

It appears this was a little ambitious for the Omnibus. We have 8 minutes erroneously coded as the main activity '*computing/internet*'. Any main activity coded as computer use is therefore a mis-code which should be recoded elsewhere. We cannot be sure what the true code should be, but we can look to the full-scale TUS for guidance on this. Most computer use on the full-scale TUS was poorly specified and coded as '*unspecified computer use*', with about a third specified as '*playing games*'. So to match the full-scale TUS, some of the 8 minutes of Omnibus computer/internet use should probably be given the detailed code '*hobbies and games*', which is part of the broader category '*sport/ hobbies*'.

1.2.7 Other specified / Not specified

On the full-scale TUS this category is dominated by '*missing/ not specified*' - there is very little which is not covered by the rest of the coding frame. However, on the Omnibus this is a separate pre-coded category for activities not covered (or apparently not covered) by the other listed categories. It is therefore '*other specified*'. Descriptions are written on the Omnibus questionnaire. It is not clear to what extent coders tried to fit these to the other pre-coded categories. Although the 12 minutes of '*other specified*' on the Omnibus only about 1% of all time, it could be quite significant should it turn out that it maps mainly to one or two codes. We would certainly want, on future Omnibus surveys, to examine these '*other specified*' and attempt to place them in other codes.

1.2.8 Travel

The Omnibus recorded 14 minutes less travel time than the full-scale TUS. This was a significant difference.

Means of travel

We first looked at means of travel to see if this explained the difference (see Appendix 1.2). However, differences were not confined to any one means of travel, and were spread among all means of travel roughly in proportion to size.

Travel Purpose

We then looked at travel purpose (see Appendix 1.2), but the Omnibus has too little information on travel purpose for any useful comparisons.

The Omnibus has just 3 purposes for travel: escort, pleasure and other. The full-scale TUS has 27 separate purposes, relating to activities from all parts of the coding frame eg work (to/from, in course of), education, shopping, and so on.

Additionally, the Omnibus categories do not map onto the full-scale TUS categories. The 87 minutes of travel time measured by the Omnibus is divided into 4 minutes 'escort', 5 minutes

'pleasure', 74 minutes 'other', and 3 minutes 'not specified'. These are not helpful categories. The definition of 'escort' is clear, but the distinction between 'pleasure' and 'other' is unclear, and far too much time has been coded in the 'other' category.

For any future Omnibus we should consider clearer and more helpful categories for travel purpose.

Mis-coding of travel as a secondary activity

We have noted earlier that the full-scale TUS was fully edited, and the Omnibus data was only partially edited. At the outset on the full-scale TUS it was decided that travel could not be a secondary activity. Therefore during the computer editing of the full-scale TUS, any travel recorded as a secondary activity was moved so that it was the main activity. There was no such editing on the Omnibus.

An examination of the secondary activities on the Omnibus data shows that **there were 6 minutes of travel recorded as secondary activity**. This should have been moved to the main activity.

These six minutes did not map to one code, but were spread among many. Two minutes of this had '*gardening/ pet care*' as the main activity- ie walking the dog, while three minutes had '*work*' as the main activity. The remaining one minute was spread among many codes. We see therefore that we have accounted for almost half the difference in travel between the full-scale TUS and Omnibus, while barely affecting the differences between the other main categories in Table 1.1. Total travel time measured by the Omnibus is now 93 minutes, compared to the 101 minutes measured by the full-scale TUS. There remains an 8 minutes travel difference, which is not statistically significant (at 1.7 standard errors), but which could still be real.

Travel activity not recorded

The most probable reason for the remaining 8 minutes difference in travel time is that those completing the Omnibus may simply have failed to record travel. It is known that in the full-scale TUS respondents sometimes forgot to record travel - for instance a respondent would magically go from home to the shops without recording any travel - and this was corrected. It seems likely that a similar problem would occur on the Omnibus survey. The interviewer's job was difficult: the Time Use Diary was one of many modules in the Omnibus and this problem was not specifically briefed to the interviewers, so it seems likely that such errors could slip through.

We intend as a further step to examine Omnibus diaries to identify the possible scale of any such errors.

2 Omnibus and Full-scale TUS compared - Employed, on weekends

Table 2.1 below shows time use by main type of activity by the employed on weekends, as measured by the main Time Use Survey and the Omnibus. It also shows the number of minutes difference between the two measures, and the number of standard errors difference. If the two surveys were equally proficient in measuring time use, then we would expect the average time use figures for each survey to be within two standard errors of each other 95% of the time.

Table 2.1: Average time spent on MAIN activities each day
 - all employed (aged 16 yrs or more)
 - weekends only

	Full-scale Time Use Srvy - GB - July/August	Omnibus - July 2001	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>number of standard errors</i>
Sleep	534	543	(- 9)	0.7
Eating	100	98	2	0.3
Personal care (wash/ dress)	48	45	3	1.3
Paid work & study	96	67	29	1.9
Housework & childcare	201	200	1	0.1
- childcare (own children)	24	35	(-11)	1.3
- other housework	177	165	12	1.0
Leisure	348	372	(-23)	1.5
- voluntary work	15	19	(-4)	0.7
- social/ 'time out'/ ents	123	147	(- 24)	1.7
- sport/ hobbies	51	48	3	0.3
- TV/ media	159	158	1	0.1
Travel	105	95	10	1.1
Computing/ internet **	N/A	8	(- 8)	N/A
Not spec/ other specified ***	9	11	(- 2)	N/A
TOTAL TIME	1440	1440		

Nmbr in sample (weighted) 225

222

Nmbr in sample (unweighted) 516

207

* The Omnibus was re-weighted so it more closely matched the full-scale TUS sample characteristics

** Computing was a category only on the Omnibus, and it was supposed to be recorded as a secondary activity. The computing recorded here is therefore an error. It is likely that some of this would be coded as 'hobby'.

*** For the Omnibus this category is mainly 'other specified', and is for activities not covered by the other pre-codes. For the Full-scale TUS this is mainly 'not specified'.

Results

Because the sample sizes are now quite small, there is more variation in each survey's measures of time spent on each main activity. However, none of the differences is significant (ie above two standard errors), although the difference for work - at 1.9 standard errors - comes close, and difference in travel time is similar to that for weekdays, indicating that this difference is probably real and not due to sample variation. The different Omnibus measure of work-time has had a knock-on effect on other activities - the Omnibus records less time working, more time sleeping and less time on leisure activities.

Below we look further at the difference in work time.

Sample characteristics

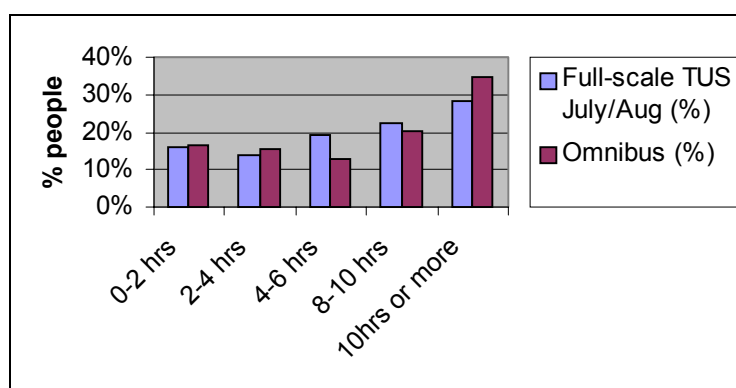
The sample sizes are small. There were some differences between the two surveys for sex and day diary completed. As these can have an important affect on time use, we carried out a small amount of re-weighting of the Omnibus to compensate for these differences. These re-weighted results are the results shown in Table 2.1 and Appendix 2.1. This re-weighting actually had a small effect on the time use figures (shown in Table 2.1) and on the remaining sample characteristics (shown in Appendix 2.1) - but it did enable us to eliminate sex and diary-day as cause of time use differences. Age, sex, day diary completed, household type, tenure and employment characteristics were all quite similar for the two surveys. The largest differences were for qualifications and the proportion of households with children.

Explanation for difference in time spent on paid work

The most significant difference between the surveys which affects time use results is that **by chance the Omnibus picked up far fewer people working on the weekend than the full-scale TUS** - 17% of the Omnibus sample of employed worked on the weekend, as opposed to 26% of the full-scale TUS employed sample. This Omnibus 'shortfall' was across the board - the number of people working was lower on both Saturday and Sunday, and for men and women for each day. The absolute numbers involved are quite small - the Omnibus weekend sample had about 20 fewer people at work than the full-scale TUS.

If we hold constant the working patterns, then the time use measured by each survey is much closer. The table below shows that given that someone was working at the weekend, each survey measured similar amounts of work-time:

Chart 2.1: Hours worked at the weekend by those doing ANY weekend work



Also, if we **exclude** those who worked at the weekend, and recalculate Table 2.1 (not shown), the full-scale TUS and Omnibus figures become closer. The amount of time spent on paid work & study is now the same (at just 2 minutes), the difference in sleep time is reduced to 5 minutes, and the leisure difference is reduced to 2 minutes (although travel difference remains high-ish, at 11 minutes).

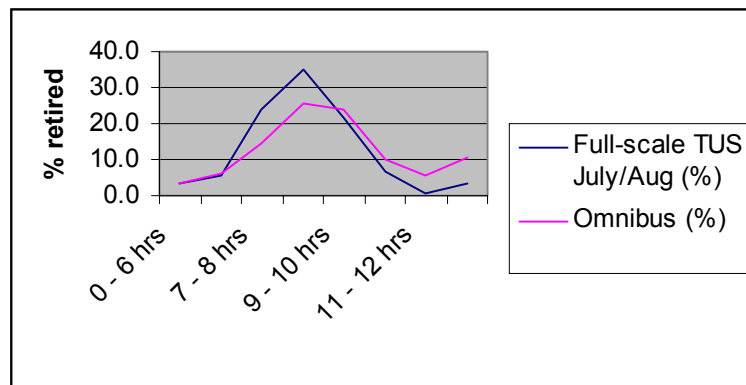
3 Omnibus and Full-scale TUS compared - Retired, weekdays

Appendix 3.1 shows time use by main type of activity by the retired on weekdays, as measured by the main Time Use Survey and on the Omnibus. The main interest in this table is that there is a very large difference in the amount of sleep measured, which impacts on all other activities. The full-scale TUS measures 507 minutes (8hrs 27 minutes), whereas the Omnibus measures a very large 566 minutes (9hrs 26 minutes). That is almost one hour of extra sleep recorded on the Omnibus survey. Re-weighting the Omnibus sample to compensate for sample differences (in age, sex, etc) hardly affects this. We needed an explanation as to why the two surveys could differ so much in the time they measured for what seems like a such a straightforward activity for such a straightforward category of person.

Distribution of sleep-time

We therefore looked in detail at the amount of sleep recorded by each diary. The chart below shows the distribution in the amount of sleep recorded by each survey.

Chart 3.1 Amount of sleep recorded by the retired on weekdays



We see there are clear differences. The Omnibus has recorded far more people than the full-scale TUS with a large amount of sleep time. Just 4% of the full-scale TUS sample of retired people sleep for longer than 11 hours - but 16% of the Omnibus sample sleep for longer than 11 hours. This is easily enough to account for the different average sleep times.

Checks on data quality of diaries with large sleep times

We then examined the Omnibus diaries with large sleep times, to see if they were valid. We were concerned that they may have been of poor quality, with a blanket coding of sleep and few other activities coded. We did not find this. They were genuine diaries of good quality recording real behaviour. The sleep was in several episodes, with typically extra sleep during the afternoon. Respondents would sleep, get up for a short period to wash or eat, and return to bed. There were many activities recorded in the diaries, including TV watching and travel - and there was a lot of sleep.

Examination of the sleep patterns of the retired

We then extended this investigation of sleep to look at sleep patterns of **all** the retired. We were now interested in all types of sleep behaviour, and in particular wanted to look at 'broken sleep' (i.e. respondents getting up in the night) as well as extra sleep or naps in the afternoon. One concern was that the high average sleep time recorded by the Omnibus may be an over-estimate because it misses incidences of broken sleep.

Table 3.1 Sleep patterns of retired, weekdays

	Main Time Use Survey		Omnibus	
	<i>Number of diaries</i>	<i>%</i>	<i>Number of diaries</i>	<i>%</i>
Single unbroken sleep episode	134	82	200	58
One main sleep episode and get up in night (but no extra naps)	11	7	18	5
Extra naps or sleep episodes (but do not get up in night)	14	9	106	31
Extra naps AND get up in night	4	2	21	6
TOTAL	163	100	345	100

Table 3.1 above shows the proportion of diaries where the respondent had one single unbroken episode of sleep, the proportion where the sleep was broken (but there were no other sleep episodes), the proportion where there were extra naps (but there was no broken sleep), and the proportion where there were both extra naps and broken sleep at night.

There are marked differences in the sleep patterns of the elderly recorded by the full-scale TUS and the Omnibus.

In general the full-scale TUS recorded simpler sleep patterns than the Omnibus. 82% of the full-scale TUS diaries had a single sleep episode, compare to 58% of the Omnibus diaries. Each survey had a similar ability to pick up night time interruptions to sleep (9% of full-scale TUS diaries had night time interruptions, compare to 11% of the Omnibus diaries), but the Omnibus had far more diaries with extra sleep episodes (37%, compared to 11% of the full-scale TUS diaries). Further, the extra sleep episodes picked up by the Omnibus were in general more complex than those picked up by the full-scale TUS. The full-scale TUS would typically pick up a single extra afternoon nap, whereas the Omnibus had far more instances where the respondent was sleeping, getting up, sleeping again, getting up and so on throughout the day.

At the outset it was thought that self-reporting (as on the full-scale TUS) could be better at capturing interruptions to sleep than the interviewer-administered diary (as on the Omnibus). The interviewer-administered Omnibus diary would therefore be expected to over-estimate

sleep. However, this has not been the case, and we have seen that there was little difference between the surveys. Further, the breaks in night time sleep were too short to have a great effect on overall average sleep time. The breaks amounted to an average of just 3 minutes and 4 minutes per diary (unweighted, and across all diaries) for the full-scale TUS and Omnibus respectively.

We have also seen above how the Omnibus was much better than the full-scale TUS at picking up extra naps. The amounts of time involved are now significant. The full-scale TUS identified an average of just 6 minutes extra per diary of naps, while the Omnibus identified an extra 37 minutes per diary (these are unweighted figures, averaged across all diaries).

The rest of the difference between the Omnibus and the full-scale TUS (about 30 minutes) is accounted for by longer single sleep episodes recorded on the Omnibus.

In summary, there are two main reasons for the differences in average sleep time between the Omnibus and the full-scale TUS. The first is that the Omnibus is picking up more instances of extra naps than the full-scale TUS. The second is that it is also picking up main sleep episodes which are on average longer than those on the full-scale TUS. Both the Omnibus and full-scale TUS are picking up about the same proportion of diaries with interruptions to night time sleeping, but these interruptions are on average small and have only a slight effect on overall average sleep time.

Instrument effects

It seems clear we were getting 'instrument' effects here. The full-scale TUS was a self-completion diary, while the Omnibus diary was completed by an interviewer in conversation with the respondent. It may be that for any given respondent the Omnibus is better at picking up naps than the full-scale TUS. But, taken with the differences in the time measured for the main sleep episodes, and the fact that the Omnibus gets a higher response from the retired than the full-scale TUS (see Appendix A3), that is unlikely. So rather than the full-scale TUS failing to record some of the sleep of the people who fill in the diary, it seems most likely the full-scale TUS is missing **some people**, and the people it misses are those with complex sleep patterns. We don't have Omnibus information on the health condition of the respondent, but **it is most likely that the Omnibus was more successful than the full-scale TUS in getting time use information from elderly respondents who are fragile or who have health problems.** These are just the sort of people who would find a self-completion diary onerous to complete alone, but who would give the information to an interviewer to complete a diary for them.

Presenting time use results for the elderly

We are in the unusual position in that we believe the Omnibus results are more representative of retired people than the full-scale TUS results. Given that we want to use the Omnibus as a 'marker' for the full-scale TUS, it is not immediately obvious what to do about this. A number of approaches could be tried. First, it would be helpful to have a standard health question added to any future Omnibus (eg '*How was your general health? Would you say it was very good, good, etc? OR 'Do you have a long standing illness etc...?'). This would enable us to compare the general health of the retired on the Omnibus with the full-scale TUS. It may be possible to weight the Omnibus using this health question so it matches the full-scale TUS distribution. Alternatively, we may simply exclude the retired (or, say, the retired in poor health) when comparing the results of the two surveys.*

4 Conclusions & Recommendations

- We are not just comparing a pre-coded (Omnibus) diary with a fully-written (full-scale TUS) diary, we are comparing **all** survey design characteristics, in particular self-completion (full-scale TUS) with interviewer administered (Omnibus).
- The Omnibus (pre-coded) diary provides comparable results with the full-scale TUS (fully written) diary for the main sub-categories of person.
- Much of the difference in the measures of travel time has been accounted for, but further work is planned to investigate the remaining difference.
- For the retired there is a real difference between the results provided by the Omnibus and the full-scale TUS, in that the Omnibus data is more representative than that from the full-scale TUS. This is because the Omnibus is interviewer administered, rather than self-completion, and more easily gets response from the retired in poor health.
- The Omnibus data should be weighted to compensate for non-response. Although the weighting within the main sub-categories of person made little difference to the results (for each sub-category), the Omnibus as a whole should be weighted so that the whole sample is representative. The managers of the ONS Omnibus Survey are currently considering providing non-response weights with the data as a matter of course.
- Some refinement and clarification of the detailed Omnibus activity categories is needed. A clarification and perhaps expansion of the travel purpose codes should be considered. Additionally, data users must decide if an Omnibus with 33 or so activity codes will provide the detail they require.
- The Omnibus data is a worthwhile data set in its own right and at a broad level would provide an indication of any major changes in time use since the last full survey. Special consideration will need to be given to data from the retired when comparing whole samples of any future Omnibus with the full-scale TUS.
- ONS propose to administer a pre-coded diary on the ONS Omnibus survey in 2005 (for one month in each quarter of the year).
- A full time use survey be carried out in 2010.
- A comparison exercise will be carried out in 2010, having full and pre-coded diaries in the field at the same time, and preferably over a longer period during the Autumn or Spring.

APPENDIX A1: Characteristics of Full-scale Time Use Survey and Omnibus Survey

	Full-scale Time Use survey - 'own words' diary	Omnibus - 'pre-coded' diary
Type of survey	Separate survey solely on Time use	Added to existing Omnibus survey
Fieldwork period	June 2000 - September 2001	'July' 2001 Omnibus = 13 July - 9 August 2001
Sample	Private households	Private households
Coverage	GB and Northern Ireland	GB only
Who completes diary	All aged 14yrs or more (adult diary) and 8-13yrs (child diary)	1 person per hhld aged 16 yrs or more
Number of diary days	2 designated diary days	1 day (previous day recalled)
Descriptions/ pre-coded	respondent writes in descriptions of activity	respondent selects pre-coded activity categories
Activity detail	coded to approx 250 activity codes	33 main codes - plus additional codes for mode & purpose of travel
Self-completion/ interviewer	self completion	with interviewer
Diary/ recall	diaries left with respondent	respondent recalls previous day
Time Periods	10 minute time periods	10 minute time periods
Main & secondary activity	Main & secondary activity for aged 14 or more, main only for aged 8-13 yrs.	Main & secondary activity recorded
Location	Location of activity recorded	Location not recorded
Who with	'Who carried out activity with' recorded	'Who with' not recorded
Other data collected	Includes household interview and individual interviews with those aged 8yrs or more.	Diary only - but hhld and personal details available form Omnibus 'core' survey.
Coding	Activities are office-coded	Activities are pre-coded

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	Full-scale Time Use survey - 'own words' diary	Omnibus - 'pre-coded' diary
Achieved sample	21,000 diary-days	1,500 diary-days
Response rate	Diary overall 45% Household Qnre: 61% Personal Qnre: 81% Diary: 73%	Diary overall 56% Household Qnre: 63% Diary: 89%
Editing	Fully edited	Not edited
Weighting for non-response	Yes	Weighted for selection of 1 person per household, but not for non-response
Overall survey cost (to delivery of clean data files)	est £1.5 million	est £25k-£30k
Cost per diary	est £70	est £20

APPENDIX A2: Examples of diary pages

Omnibus pre-coded diary - extract

Activity groups	Activity codes and descriptions (Also see notes on right hand page)		Early morning										
			4am		5am		6am		7am				
				30		30		30		30			
Personal care	1	Sleeping, resting	1	x x x x x x x x x x									
	2	Washing, dressing/undressing, etc	2					x x x					
Eating, drinking	3	Eating or drinking/ having a meal (at home or away from home)	3					x x					
	4	Preparing food and drinks; cooking; washing up	4										
Housework and other household tasks	5	Cleaning, tidying house	5										
	6	Washing, ironing or mending clothes etc	6										
	7	Maintenance of house, DIY, gardening	7										
	8	Pet care	8										
Travel	9	Travelling	9										
	9a	How you travelled (enter letter - see right page)	9a						X X X X				
	9b	Purpose of journey (enter letter - see right page)	9b						W T T T				
Paid work	10	Work for job outside home (ordinary working arrangements)	10										
	11	Work for job at home (ordinary working arrangements)	11										
	12	Additional work for job (overtime, work brought home etc.)	12										
Education and courses	13	Formal education	13										
	14	Recreational courses and study	14										
Voluntary work	15	Voluntary work for or on behalf of an organisation or charity	15										
Caring for children and adults	16	Caring for/ looking after and playing with own children	16										
	17	Caring for/looking after other children	17										
	18	Helping or caring for adults who live with you	18										
	19	Helping or caring for other adults who don't live with you (not as voluntary or paid work)	19										
Shopping and appointments	20	Shopping, banking, post-office	20										
	21	Appointments with the doctor, dentist, hairdresser, DSS plumber, etc	21										
Leisure	22	Watching TV and videos/DVDs, listening to radio or music	22										
	23	Reading	23										
	24	Playing sports, exercising	24										
	25	Visiting/going out with friends, family, neighbours	25										
	26	Spending time with friends, family, neighbours at your home	26										
	27	Contact with friends and family by telephone, email, or letter	27										
	28	Visits to cinema, theatre, concerts, sporting events, museums, galleries, historical monuments, library etc.	28										
	29	Attending church, temple, mosque, synagogue, or other religious meetings, praying alone, attending political or other meetings	29										
	30	Hobbies and other leisure activities	30										
	Computer and internet use	31	Accessing the internet/emailing (see note below 32)	31									
32		Using a computer (not internet) 31 & 32: Internet and computer use to be coded as secondary activity only. Code what they were using computer for as main activity (see right hand page).	32										
Other	33	Other activities not listed (please write in below)	33										
			4am	30	5am	30	6am	30	7am	30	Early morning		

Full-scale TUS diary - extract

Time am	What were you doing? Please record your main activity for each 10 minute period. Enter one main activity on each line	What else were you doing? Write in most important activity you were doing at the same time eg looking after children, listening to the radio or having a drink	Where were you? eg at home, at friends in car, on bus, train, cycling, walking	Were you with anybody? Please mark the boxes				
				Alone	Children up to 9 living in your household	Children aged 10 to 14 living in your household	Other household members	Other persons that you know
7.00 - 7.10				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.10 - 7.20				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.20 - 7.30				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.30 - 7.40				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.40 - 7.50				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.50 - 8.00				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.00 - 8.10				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.10 - 8.20				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.20 - 8.30				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.30 - 8.40				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.40 - 8.50				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.50 - 9.00				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX A3: Size of sub-categories of person

Number of diary-days completed by economic activity

	Full-scale Time Use Survey - GB - July/August		Omnibus - July 2001	
	<i>unweighted</i>	<i>weighted</i>	<i>unweighted</i>	<i>weighted *</i>
Economically active				
- in employment	1028	771	792	867
- unemployed	40	31	35	38
Economically inactive				
- retired	328	289	459	383
- looking after home	119	91	116	112
- full-time student	22	21	25	33
- sick/ disabled/ others	115	91	116	111
Missing	69	51	-	-
TOTAL	1721	1400	1543	1546

* The Omnibus was weighted to compensate for the selection of one person per household. It was not weighted for non-response.

By far the largest category is those in employment (60% of the unweighted full-scale TUS sample). The next largest sub-category is 'retired' (19% of the unweighted full-scale TUS sample), followed by 'looking after the home' (just 7% of the unweighted full-scale TUS sample).

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Weekday/ Weekend

We will further make a weekday/ weekend distinction. The numbers for employed and retired are as follows:

Employed and Retired - number of diary-days completed by weekday/ weekend

	Full-scale Time Use Survey - GB - July/August		Omnibus - July 2001	
	<i>unweighted</i>	<i>weighted</i>	<i>unweighted</i>	<i>weighted</i>
Employed				
- weekday	512	546	580	640
- weekend	516	225	207	222
- day missing	-	-	5	6
Sub-total employed	1028	771	792	867
Retired				
- weekday	163	205	345	286
- weekend	165	84	107	91
- day missing	-	-	7	7
Sub-total retired	328	289	459	384

* The Omnibus was weighted to compensate for the selection of one person per household. It was not weighted for non-response.

The largest cell sizes are for the employed on weekdays and weekend, and the retired on weekdays only. There are just 107 Omnibus diaries for the retired at weekends, which is insufficient for comparisons.

APPENDIX A4: Activity code mapping from full-scale TUS to Omnibus

Full-scale TUS category	Sub-category	Equivalent Omnibus code	Comments
SLEEP		1	
EAT		3	
WASH/ DRESS		2	
PAID WORK/ STUDY			
	Paid work	10, 11,12	Main/ Omni treat overtime & home-based jobs differently
	Formal education	13	
	Free time study/ courses	14	
HOUSEWORK & CHILDCARE			
Childcare (own)		16	
Other housework			
	Food management	4	
	Cleaning	5	
	Wash/ iron	6	
	Repairs/ grdnng/ pet care	7, 8	Code overlap
	Shopping & services	20,21	Look at these separately? Confusion with full-scale TUS code 'hhld manage' (37)
	Care - own adults	18	
LEISURE			
Voluntary			
	Formal (organisations)	15	
	Other people's children	17	
	Other people's adults	19	
	Other	x	No Omnibus code for this
	Religious/ other meetings	29	
Social			
	Going out with friends/ rel	25	For full-scale TUS split codes by location
	At home with friends/rel	26	For full-scale TUS split codes by location
	Feast/ weddings	x	not clear where Omni codes - 25?
	telephone/ write to friends	27	
Entertainment		28	
Resting/ time out		x	No Omni code
Play sport		24	Includes exercise
Hobbies/ other		30	'other' vague - sport/ hobby difference ?
Media			
	Reading	23	
	TV + Radio	22	
TRAVEL		9 etc	Omni has travel codes by means and purpose
COMPUTING/ INTERNET		31, 32	ERROR. Should be secondary activity only. Main activity 'hobby' (code 30) ?
OTHER ACTIVITIES/ NOT SPEC		33	Omni & full-scale TUS differ: essentially Omni is 'other spec' and full-scale TUS is 'not spec'.

APPENDIX 1.1: Sample Characteristics - EMPLOYED - WEEKDAYS ONLY

		Full-scale TUS (GB) - July/August - Weekdays	Omnibus - July 2001 - Weekdays	Comments
Sex (%)	Male	57	50	The Omnibus has a smaller proportion of males
	Female	43	50	
Age (%)	16-24	11	13	The proportions of under 25s and over 65s are similar, but other age groups differ
	25-44	52	44	
	45-64	34	42	
	65 or more	3	2	
Day (%)	Mon	16	26	The Omnibus has a greater proportion of diaries at the beginning of the week
	Tues	18	21	
	Wed	20	18	
	Thurs	23	20	
	Friday	24	15	
Tenure	Own/mortgage	78	84	The Omnibus has higher home ownership
	Rent	20	15	
	Other	2	1	
Hhld type	Single person	11	8	The Omnibus has more married couples, and fewer single person hhlds
	Marr/ cohab	73	80	
	Other	16	12	
Ave hhld size		2.91	3.08	Omnibus a little higher
% with children under 16		39	40	Similar
% hhld own car		86	91	The Omnibus has a higher car ownership
Education	A levels & above	46	41	Omnibus has fewer with no qualifications, and fewer with high qualifications.
	Other qual	27	42	
	No qual	27	17	
Full time?	Full-time	76	73	Similar
	Part-time	24	27	
Employee?	Employee	87	87	Similar
	Self-emp	12	13	
	Don't Know	1	0	
% work previous 7 days (Qnre)		91	95	Omnibus has slightly more respondents working.
% work at all on diary - all emply		71	75	
% work at all on diary - FT only		77	80	
<i>Sample size (weighted)</i>		<i>546</i>	<i>640</i>	
<i>Sample size (unweighted)</i>		<i>512</i>	<i>580</i>	

APPENDIX 1.2: Travel time - EMPLOYED - WEEKDAYS ONLY

Time Use by means of travel

	Full-scale TUS (July/Aug)	Omnibus	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>no. of stndrd errors</i>
Car or van	66	59	7	1.6
Walk	16	12	4	2.2
Bicycle	2	1	1	1.4
Bus/ coach	6	5	1	0.7
train/underground/ tram	4	5	(-1)	0.7
other - m'cycle/ taxi/ airplane/ boat/ not specified *	7	5	2	0.6
Sub-total: all travel	101	87	14	2.9

* Means of travel such as motorcycle, taxi and aeroplane were not mentioned specifically on the Omnibus diary, so it is unclear where they were coded. We are assuming they correspond to the 'other' category in the Omnibus.

The table above shows that differences are not confined to any one means of travel, and are spread among all means of travel roughly in proportion to size. The main differences are for travel by car (7 minutes) and by foot (4 minutes).

Time Use by purpose of travel

Purpose of travel	Full-scale TUS (July/Aug)
	<i>mins per day</i>
Personal business	0
Work/ study	44
- Work	42
- Education	2
Household	20
- Shopping/services	16
- Other	4
Leisure	36
- volntry work	5
- social	22
- sport & hobbies	3
- holidays/ day trips	7
Purpose not specified	1
Sub-total: all travel	101

The full-scale TUS and Omnibus record different amounts of information about travel. We see above that each survey records 'means of travel' in some detail, but the purpose is recorded in very different amounts of detail. The full-scale TUS has 27 separate purposes, relating to activities from all parts of the coding frame (these have been collapsed in the table above). The Omnibus has just 3 purposes for travel: escort, pleasure and other, and they do not map onto the full-scale TUS categories (see main text).

APPENDIX 2.1: Sample Characteristics - EMPLOYED - WEEKENDS ONLY

		Full-scale TUS (GB) - July/August - Weekdays	Omnibus - July 2001 - Weekdays *	Comments
Sex (%)	Male	57	56	Similar
	Female	43	44	
Age (%)	16-24	12	10	Both surveys have roughly the same proportions under and over 65, but of those under 65, the Omnibus has picked up more older people.
	25-44	52	48	
	45-64	34	39	
	65 or more	2	3	
Day (%)	Saturday	49	51	Similar
	Sunday	51	49	
Tenure	Own/mortgage	78	79	Very similar.
	Rent	20	20	
	Other	2	1	
Hhld type	Single person	10	8	The Omnibus has a slightly higher proportion of married/cohabiting couples
	Marr/ cohab	74	79	
	Other	16	13	
Ave hhld size		2.95	2.95	Very similar.
% hhlds with children under 16		38	34	The Omnibus has fewer households with children under 16 yrs.
% hhlds own car		86	89	The Omnibus has a higher car ownership
Education	A levels & above	46	38	The Omnibus has fewer people with A levels or above.
	Other qual	26	39	
	No qual	28	23	
Full time?	Full-time	76	76	Very similar.
	Part-time	23	24	
	Don't Know	1	0	
Employee?	Employee	87	87	Very similar.
	Self-emp	12	13	
	Don't Know	1	0	
% work previous 7 days (Qnre)		91	96	The full-scale TUS has picked up more weekend working - caused by Sat/Sun difference?
% work at all on diary - all emply		26	17	
% work at all on diary - FT only		27	19	
<i>Sample size (weighted)</i>		225	222	
<i>Sample size (unweighted)</i>		516	207	

* The Omnibus was re-weighted so sex and diary-day more closely matched the full-scale TUS sample

APPENDIX 3.1: Average time spent on MAIN activities each day

- all retired
- weekdays only

	Main Time Use Survey - GB - July/August	Omnibus - July 2001 *	Difference (Full-scale TUS minus Omnibus)	
	<i>mins per day</i>	<i>mins per day</i>	<i>mins per day</i>	<i>number of standard errors</i>
Sleep	507	566	(-59)	5.3
Eating	121	102	19	3.7
Personal care (wash/ dress)	53	46	7	2.1
Paid work & study	16	13	3	0.4
Housework & childcare	269	215	54	4.0
- childcare (own children)	0	5	(- 5)	1.6
- other housework	269	210	59	4.5
Leisure	393	425	(-32)	2.0
- voluntary work	18	16	2	0.4
- social/ 'time out'/ ents	122	72	50	4.3
- sport/ hobbies	38	49	(- 11)	1.5
- TV/ media	215	288	(-73)	5.0
Travel	66	64	2	0.3
Computing/ internet **	N/A	4	(-4)	N/A
Not spec/ other specified ***	15	6	9	N/A
TOTAL TIME	1440	1440		

Nmbr in sample (weighted) 205

285

Nmbr in sample (unweighted) 163

345

* The Omnibus was re-weighted so it more closely matched the full-scale TUS sample characteristics

** On the Omnibus 'computing' was supposed to be recorded as a secondary activity only, with the purpose of the computing coded as the main activity. These are therefore mis-codes, some of which should have been coded as 'hobby'.

*** For the Omnibus this category is mainly 'other specified', and is for activities not covered by the other pre-codes. For the Full-scale TUS this is mainly 'not specified'.

There are large differences between the time use figures from the Omnibus and full-scale TUS, many of them significant. These are not due to differences in the sample characteristics (see Appendix 3.2). Although there were some differences in the sample characteristics, these were not large, and were unlikely to explain the differences in time use figures. Nevertheless, the Omnibus sample (of retired, weekdays only) was extensively re-weighted so it closely matched the full-scale TUS sample characteristics. The figures in Appendix 3.1

and 3.2 are these re-weighted figures. The re-weighting made very little difference to the figures for time use in the table above, but it did enable us to eliminate sample differences as a cause for the time use differences.

We also looked in more detail at the diary entries for sleeping (see main text), and this provided a likely explanation for the differences. The probable explanation is that the Omnibus, because it is interviewer administered rather than self-completion like the full-scale TUS, is picking up more elderly with health problems who spend more time in bed (often extra time in the afternoon) and watching TV, and less time doing housework and socialising.

APPENDIX 3.2: Sample Characteristics - RETIRED - WEEKDAYS ONLY

		Full-scale TUS (GB) - July/August - Weekdays	Omnibus - July 2001 - Weekdays *	Comments
Sex (%)	Male	43	45	Similar
	Female	57	55	
Age (%)	16-24	0	0	Very similar. Note we have used an extra age category to identify those aged 75 yrs or more.
	25-44	0	0	
	45-64	19	20	
	65-74	39	38	
	75 or more	42	42	
Day (%)	Mon	17	16	Similar
	Tues	18	20	
	Wed	18	17	
	Thurs	25	25	
	Friday	23	22	
Tenure	Own/mortgage	70	71	Similar
	Rent	28	26	
	Other	2	3	
Hhld type	Single person	33	34	Similar
	Marr/ cohab	56	58	
	Other	11	8	
Ave hhld size		1.85	1.81	Similar.
% hhlds with children under 16		1	2	Similar.
% hhlds own car		58	56	Similar.
Education	A levels or above	16	12	The Omnibus has fewer people with A level and above, and more with no formal qualifications
	Other qual	20	18	
	No qual	64	70	
Full time?	Full-time	N/A	N/A	
	Part-time	N/A	N/A	
Employee?	Employee	N/A	N/A	
	Self-emp	N/A	N/A	
% work previous 7 days (Qnre)		0	0	A similar percentage did some paid work during the diary day.
% work at all on diary - all		5	6	
% work at all on diary - FT only		N/A	N/A	
<i>Sample size (weighted)</i>		205	285	
<i>Sample size (unweighted)</i>		163	345	

* The Omnibus was re-weighted so it more closely matched the full-scale TUS sample characteristics