

Design and implementation of a time use diary app in the Age 14 Survey of the Millennium Cohort Study

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Outline

- Introduction to the Millennium Cohort Study
- Age 14 Survey time use diary mixed-mode research design
- Time use diary app
- Data quality findings from piloting

Millennium Cohort Study

- Following the lives of approximately 19,000 children born between 2000-2002 in 398 areas of the UK.
- Six waves completed: 9 months, 3, 5, 7, 11 and 14 years.
- Highly multidisciplinary survey, designed to capture the influence of early family context on child development and outcomes throughout childhood, into adolescence and through adulthood
- Linked administrative data: education records, birth registration and hospital of birth records
- Time use diary: new survey element at age 14

Age 14 time use diary: research design

- Two diaries per respondent: one weekday and one weekend day, each covering a 24 hour period
- Pre-coded light diaries: 44 age-specific activity codes, within 12 main categories
- Main activity, location, who with, enjoyment
- Mixed-mode design: time use app & web-administered diary
- Paper diaries offered only to those with no internet access or those refusing to fill in app/web

Time use diary instruments

	Paper	Web	App
Approach	Time-grid	Time-grid	Question-based
Time-unit	10 minute slots	10 minute slots	User-assigned start and end times
Diary dimensions	Overlap	Overlap	Coterminous
Soft and hard checks	No	Yes	Yes
Aide-Memoire	No	Yes	Yes

Paper diary



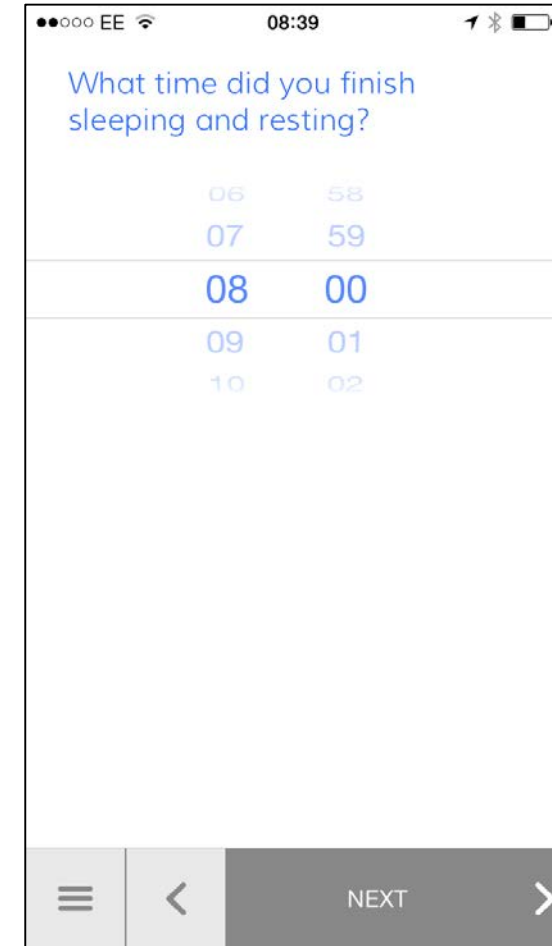
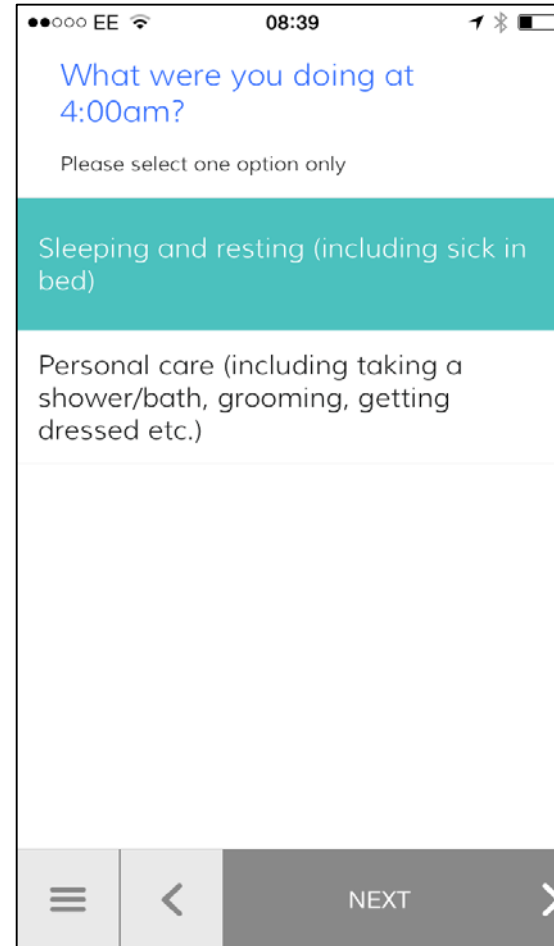
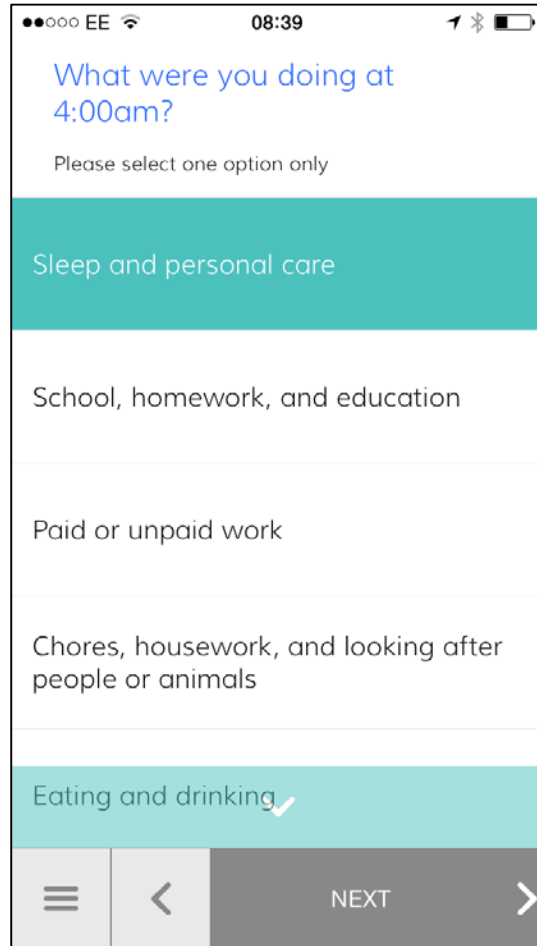
EARLY MORNING

MORNING



WHAT WERE YOU DOING?		4am	5am	6am	7am	8am	9am	10am	11am	WHAT WERE YOU DOING?		
		10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	
Sleep and personal care	Sleeping and resting (including sick in bed) Personal care (including taking a shower/bath, grooming, getting dressed etc.)										Sleeping and resting (including sick in bed) Personal care (including taking a shower/bath, grooming, getting dressed etc.)	Sleep and personal care
School, homework, and education	Homework In class School breaks School clubs Detention										Homework In class School breaks School clubs Detention	School, homework, and education
Paid or unpaid work	Paid work (including paid babysitting and paid work for the family) Unpaid work for family or other non-household members (e.g. help in family business)										Paid work (including paid babysitting and paid work for the family) Unpaid work for family or other non-household members (e.g. help in family business)	Paid or unpaid work
Chores, household, and looking after people or animals	Cooking, cleaning, and shopping for the household Fixing things around the house, fixing bikes, gardening Looking after brothers, sisters, other children in the household Looking after parent or other adult in the household (medical or personal care) Looking after animals										Cooking, cleaning, and shopping for the household Fixing things around the house, fixing bikes, gardening Looking after brothers, sisters, other children in the household Looking after parent or other adult in the household (medical or personal care) Looking after animals	Chores, household, and looking after people or animals
Eating and drinking	Eating or drinking in a restaurant or cafe Eating a meal Eating a snack or having a drink										Eating or drinking in a restaurant or cafe Eating a meal Eating a snack or having a drink	Eating and drinking
Physical exercise and sports	Cycling Individual ball games and training (e.g. tennis, badminton) Jogging, running, walking, hiking Team ball games and training (e.g. football, hockey) Swimming and other water sports Other exercise (e.g. dancing, keeping fit) and other sports (e.g. skateboarding, gymnastics)										Cycling Individual ball games and training (e.g. tennis, badminton) Jogging, running, walking, hiking Team ball games and training (e.g. football, hockey) Swimming and other water sports Other exercise (e.g. dancing, keeping fit) and other sports (e.g. skateboarding, gymnastics)	Physical exercise and sports
Traveling (including walking to school)	Travel by bus, taxi, tube, plane Travel by car, van (including vehicles owned by friends and family) Travel by physically active means (walk, bike etc.)										Travel by bus, taxi, tube, plane Travel by car, van (including vehicles owned by friends and family) Travel by physically active means (walk, bike etc.)	Traveling (including walking to school)
Social time and family time	Attending live sporting events Concerts, theatre, performances, gigs etc. Exhibitions, museum, library, other cultural events Shopping (including window shopping, hanging out at shopping centre) Speaking on the phone (including Skype, video call) Speaking, socialising face-to-face										Attending live sporting events Concerts, theatre, performances, gigs etc. Exhibitions, museum, library, other cultural events Shopping (including window shopping, hanging out at shopping centre) Speaking on the phone (including Skype, video call) Speaking, socialising face-to-face	Social time and family time
Internet, TV, and digital media	Answering emails, instant messaging, texting Browsing and updating social networking sites (e.g. Twitter, Facebook, BBM, Snapchat) General internet browsing, programming (not time on social networking sites) Listening to music, radio, podcast, other audio content Playing electronic games and Apps Watch TV, DVDs, downloaded videos										Answering emails, instant messaging, texting Browsing and updating social networking sites (e.g. Twitter, Facebook, BBM, Snapchat) General internet browsing, programming (not time on social networking sites) Listening to music, radio, podcast, other audio content Playing electronic games and Apps Watch TV, DVDs, downloaded videos	Internet, TV, and digital media
Volunteering and religious activities	Volunteering Religious activities (including going to places of worship, praying etc.)										Volunteering Religious activities (including going to places of worship, praying etc.)	Volunteering and religious activities
Hobbies and other free time activities	Did nothing, just relaxing, bored, waiting Hobbies, arts and crafts, musical activities, writing stories, poetry etc. Reading (not for school)										Did nothing, just relaxing, bored, waiting Hobbies, arts and crafts, musical activities, writing stories, poetry etc. Reading (not for school)	Hobbies and other free time activities
Any other activity	Other activities not listed										Other activities not listed	Any other activity
WHERE WERE YOU?		4am	5am	6am	7am	8am	9am	10am	11am	WHERE WERE YOU?		
		10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50			
At home Indoors, but not at home Outdoors											At home Indoors, but not at home Outdoors	
WHO WERE YOU WITH?		4am	5am	6am	7am	8am	9am	10am	11am	WHO WERE YOU WITH?		
		10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50			
Alone Mother Father Friends or other young people (up to 18 years old) Siblings (brother or sister) Other adults											Alone Mother Father Friends or other young people (up to 18 years old) Siblings (brother or sister) Other adults	
HOW MUCH DID YOU LIKE IT?		4am	5am	6am	7am	8am	9am	10am	11am	HOW MUCH DID YOU LIKE IT?		
		10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	10 20 30 40 50			
1 - Strongly liked 2 - Liked 3 - Neither liked nor disliked 4 - Disliked 5 - Strongly disliked											1 - Strongly liked 2 - Liked 3 - Neither liked nor disliked 4 - Disliked 5 - Strongly disliked	

App diary



The app

- Bespoke app built by Ipsos MORI using the Ipsos Mobile survey app, in conjunction with Lumi Mobile.
- Worked on iOS and Android operating systems (downloadable for free from the Apple App Store and Google Play Store).
- Required users to enter their unique username to log in.

Downloading the app

- Study members were given a leaflet with instructions for how to download the app and log in to the diary, along with their unique username.

CHILD OF THE NEW CENTURY ★ AGE 14 SURVEY

TIME-USE RECORD

APP

This leaflet gives you more information about how to log in to and use the time-use record. Please keep it safe and don't lose it!


Please tell us how you spent your time by completing the time-use record for both of your days.

FOR EACH DAY, WE WOULD LIKE TO KNOW:

- ★ What you were doing
- ★ Where you were
- ★ Who you were with
- ★ How much you liked each activity

For each day, please make sure that you fill in what you were doing from 4am to 4am, and try not to miss out any times. If you used your paper time-use notebooks to write down how you spent your time, you can use these to help you remember what you did when you fill in your record using the app. The activity list printed on the back of your notebooks is the same as the list you will be asked to select your activities from in the app record.

WHAT DID YOU DO



★ TIME-USE

HOW TO DOWNLOAD THE APP AND LOG IN

- Go to the app store (if you are using an Apple device) or to Google Play (if you are using an Android device) and search for 'Ipsos Mobile'. You can also find the app by typing: <https://bit.ly/ipsosmobile> into the internet browser of your smartphone or tablet.
- Download the 'Ipsos Mobile' app onto your Apple or Android smartphone or tablet. You will not need to pay for the app but it is best to connect to a wifi network to avoid possible data charges. Note that the app will not work on Windows or Blackberry devices. If you have any difficulties accessing the app please call 0808 238 5446 or email childnc@ipsos.com
- Open the Ipsos Mobile app. You will see the following screen. (The screenshots in this leaflet are from an Android phone. Your screen may look slightly different if you are using a different device).

Username

Password

By pressing Log in you agree to the Terms and Privacy Policy

Log in

From this screen, enter your username:

Affix log-in sticker

You do not need to enter a password.

Touch 'Log in'

★ You will see the following screen. Enter your username again, then touch 'Next'.

Welcome to the CNC time-use record. Before we move on, please enter your username to go into the time-use record.

There is a short delay between your interviewer visit and your record being ready to fill in. If your record is not yet ready to fill in, you will be asked to come back to it later. It will be ready to fill in by your first selected day.

GETTING STARTED

After you have logged in, you will see this screen:

Touch 'Guide to the time-use record app' to see how to fill it in. Then you can complete entries for each of your days below:

- Day 1 - Day 1
- Day 2 - Day 2
- Guide to the time-use record app

From this screen you can see a guide to the time-use app. This will show you how to fill it in. You should go through the guide before starting to fill in the record.

Your two days will be shown on the screen too (where it says Day 1 and Day 2 in the screenshot on the left). When you are ready to start filling one in, just touch it.

Make sure you fill in what you did for both of your days.

HOW TO FILL IT IN:

You need to enter all of the activities you do throughout each day, starting at 4am. For each activity, you will need to:

STEP 1

Press 'Add Next Activity' to enter information on what you were doing on Day 1.

Please select one option only

- ➕ Add Next Activity
- ✔ Sleeping and resting (including sick in bed): 04:00 - 07:00
- ✔ Personal care (including taking a shower/bath, grooming, getting dressed)
- ✔ Submit your record

Select 'add next activity'

On some of the screens, you will need to scroll down to see all of the options.

STEP 2

What were you doing at 07:30? Please select one option only

Sleep and personal care

School, homework, and education

Part or unpaid work

Chores, housework, and looking after people or animals

✔ Eating and drinking

✔ Eating a meal

✔ Eating a snack or having a drink

✔ Any other activity

Find the type of activity from the list and select it.

If you would prefer not to tell us what you were doing, please enter 'Any other activity'.

STEP 3

What were you doing at 07:30? Please select one option only

Eating or drinking in a restaurant or cafe

Eating a meal

Eating a snack or having a drink

✔ Any other activity

You will now see a list of more specific activities to choose from.

Choose the activity that best describes what you were doing.

STEP 4

What time did you finish eating a meal? 08:00

Enter the time when you finished doing that activity.

After each activity, you will then be asked where you were, who you were with and how much you liked it.

STEP 5

2013

- ✔ Cooking, cleaning, and shopping for the household: 20:15 - 20:45
- ✔ Watching TV, DVDs, downloaded videos: 20:45 - 22:00
- ✔ Personal care (including taking a shower/bath, grooming, getting dressed)
- ✔ Sleeping and resting (including sick in bed): 22:20 - 03:59

Submit your record


Once you have finished recording all your activities for the whole day you should touch 'Submit your record'.

You will then be asked some final questions about filling it in. Remember to fill in what you did for both of your days!

It is best to submit your record while you are connected to the internet so that it is sent right away.

04:00

SUBMIT



KEEPING YOUR INFORMATION PRIVATE

The app will automatically save your data as you go along. If you are completing your record on a smartphone or tablet which you share with other people, you should close the app when you are not using it.

Your login is just for you - nobody else has been given your login, so nobody else can see what you have entered.

THANK YOU FOR YOUR HELP

Ipsos MORI

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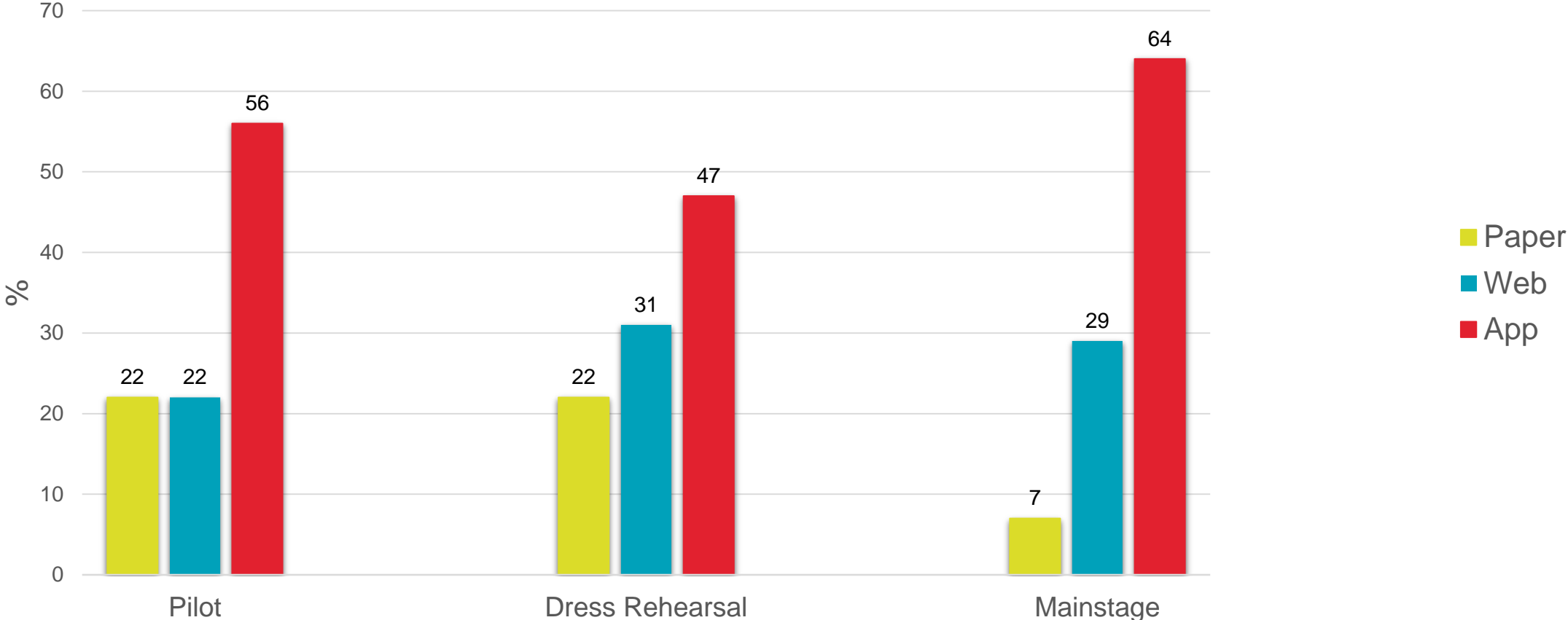
App completion

- Allowed potentially greater flexibility than other modes as respondents could complete the app in real-time if they wanted.
- Respondents were able to complete the diary without an internet connection, but had to be connected to wifi/a data network to send the diary data back.

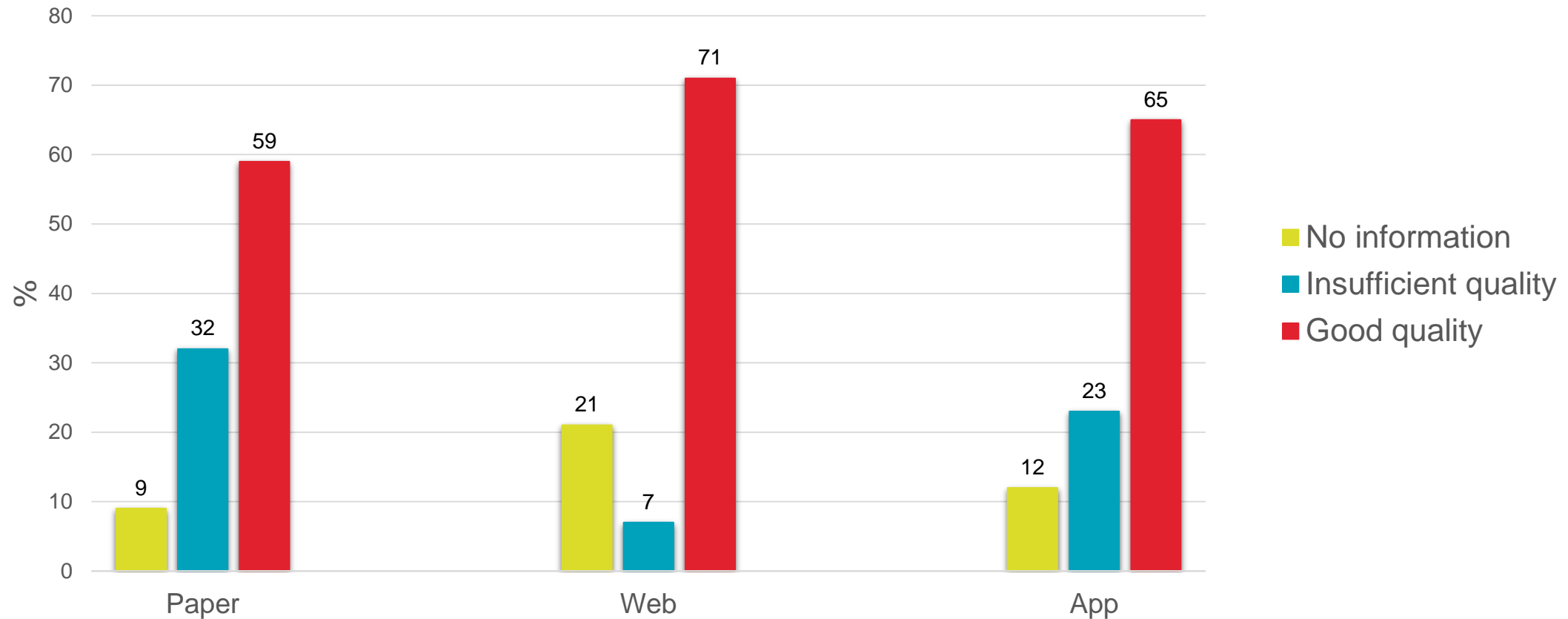
Privacy and data security

- Respondents could log in and out of the diary as they wished (ensuring privacy on shared devices).
- Data sent back to Lumi's encrypted servers.

Instrument take-up across survey stages



Diary quality after full diary processing (pilot and dress rehearsal only)



- Good quality diary threshold: less than 90 minutes missing activity time, 7 episodes, 3 out of 4 main daily activities reported (sleep/rest, personal care, eating/drinking, movement/exercise/travel)
- No information: blank diary returned/submitted

Mean number of activities reported per day

Survey phase	Paper	Web	App	All
Pilot (complete diaries)	30	28	22	26
Pilot (diaries with some time missing)	24	36	24	26
Dress rehearsal (complete diaries)	32	26	21	25
Dress rehearsal (diaries with time missing)	34	No cases	No cases	34

Note: Good quality, complete diaries only

Summary and conclusions

- App was the most popular method of completing the time use diary in both testing phases, as well as the main stage of the Age 14 Survey.
- Rates of good quality diaries and episodes indicators: generally much higher than many teenager and adult time-use surveys across all modes.
- The app does not allow the respondent to visualise context and coterminous dimensions effects, but still yields good quality data.
- Self-selection into mode not yet explored.

For more detail, please see the CLS working paper (2015/5).

Data from the mainstage is due to be deposited at UKDS summer 2017.

Thank you