Appendix A: Methodology

We commissioned CHILDWISE, a specialist market research company, to conduct a survey with parents of 0 to 17 year olds across the UK, focused on their digital parenting habits. The requirements were a sample size of 2000 parents of 0 to 17s, representative by region across the UK, representative by ethnic background, socio-economic status (SES), gender, and inclusion of parents with low or no internet use. The data were collected between October 3 and October 23, 2017.

Design and procedure

For reasons of efficiency and cost-effectiveness, we chose to use an online panel of adults ('main sample'). The obvious limitation of using an online panel is that by its nature it would not reach parents who do not use the internet. Therefore we chose to sample low or non-internet using respondents as a supplementary sample, recruited and interviewed face-to-face ('supplementary sample'). This task was made complicated insofar as we could not find, even after consulting with relevant experts, reliable up-to-date information on the frequency of internet use among UK parents.

Further limitations of online panels compared to more traditional face-to-face recruitment methods include the difficulty in sourcing groups that are hard to reach on the internet (e.g. lower socio-economic groups, ethnic minority groups), and the increased potential for random responding, illogical/inconsistent responding, over use of non-response (i.e. don't know), or rapid survey completion. The information below explains our strategy to overcome these limitations.

Research ethics

Participants in the main sample were given brief general information about the study, informed that their responses were anonymous, and asked to give informed consent before participating. All panel recruitment and consent procedures were conducted in accordance with ESOMAR regulations.[1] The online panel provider (Research Now SSI) provides incentives for participation in studies, given after the survey is completed; in the case of our 12-minute survey this ranged from a cash amount to loyalty points within sign up reward programmes. Panel participants have the option to withdraw from the panel or from an individual survey at any time. The study itself was not designed to elicit sensitive information, and nor did we maintain identifying records on individual survey participants on the LSE servers. We asked for postcode information to be entered; however these postcodes were not tied to individual entries but rather used to generate an overall index of deprivation. Only after the postcode entries were removed have we shared the fully anonymized database with collaborators.

Recruitment for participants in the face-to-face sample were similarly given the same information regarding the study and asked to give informed consent before participating. As the face-to-face interviews lasted 20 minutes, these participants were given an incentive of £10 in vouchers for general high street stores.

Sampling

a. Main sample

The online panel we used is the largest in the UK and globally. The panel, constructed by the company Research Now SSI, follows the ESOMAR guidelines and strives to be as representative as possible,

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[1] https://www.esomar.org/what-we-do/code-guidelines

including recruiting members from the top and bottom socio-economic groups, and drawing on a mixture of sources (invitation only, online partnerships, online sites).[2] Research Now SSI recruits groups that are hard to reach online through tailored campaigns, employing hundreds of profiling attributes. Due to the panel size and the amount of profile information collected, it is possible to access low incidence groups.[3] In order to ensure a nationally representative sample, Research Now SSI completes quotas using demographics and behavioural and attitudinal profiling, randomising email invites to eliminate bias.[4] It employs a survey router to ensure randomisation, sampling feasibility, and sample quality, while allowing for customisation according to the requirements of the research.[5]

Each panellist is assigned an individual ID by the online panel provider, but this was not shared with the LSE. This was used to select panellists for the survey according to the target sampling criteria and to ensure that panellists are not over-contacted. The panel provider imposes cumulative weekly and monthly limits on participation in order to avoid 'professional' panellists, which might otherwise create survey fatigue and potential bias.

The target sample was 1900 parents of 0 to 17 year olds across the UK (England, Scotland, Wales, Northern Ireland), using carefully constructed quotas to ensure as representative a sample as possible (i.e. a quota-controlled not random probability sample). To ensure the sample was as representative of parents of 0 to 17s in the UK as possible, we sourced the most up to date statistics based on this sub-sample (where possible) to establish a detailed profile. Quotas based on this profile were set for the following non-interlocking criteria:

Region	NE (3%) / NW (10%) / YKS (9%) / EM (7%) / WM (9%) / EA (8%) / LO (17%) / SE (11%) / SW (7%) / SC (7%) / WA (6%) / NI (6%)[6]
Parent's gender	Female (58%) / Male (42%)[7]
Parent's age	18-24 (3%) / 25-34 (23%) / 35-44 (43%) / 45-54 (28%) / 55-64 (4%)[8]
Ethnicity	White (84%) / Asian/Asian Black (9%) / Black/Black British (4%) / Mixed (1%) / Other (2%)[9]
Socio economic status	A (4%) / B (23%) / C1 (28%) / C2 (20%) / D (15%) / E (10%)[10]
Child's gender	Boy (51%) / Girl (49%)[11]
Child's age	0-4 (28%) / 5-8 (24%) / 9-12 (22%) / 13-17 (26%)[12]

To achieve these representative quotas most efficiently, we utilised the panel's profiling data to target the harder demographics first, whilst releasing smaller amounts of other sample batches to trickle through. This meant initially targeting males, parents with younger children, lower SES / smaller SES bands, ethnic minorities, and smaller regions. Once these were complete, sample was released to fill the other demographics. Towards the end of fieldwork, quotas became interlocked (with seven layers of quotas).

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[2] Data quality and validation checks carried out post survey are mostly automated, but require quality assurance team input to identify and remove rogue respondents. Checks include scripted logic checks, and speeding checks where responses are flagged up if completed in less than 30% of the median survey length.

[3] ESOMAR 'Panel quality: Our values-Answers to ESOMAR's 28 questions, question 5

[4] ESOMAR 'Panel quality: Our values-Answers to ESOMAR's 28 questions, question 7

[5] ESOMAR 'Panel quality: Our values-Answers to ESOMAR's 28 questions, question 8

[6] Quota set by reference to: Understanding Society – The UK Household Longitudinal Study – Wave 6 (Q1 2014 to Q4 2015) – those with dependent children.

[7] Quota set by reference to: Understanding Society – Understanding Society (Ibid.).

[8] Quota set by reference to: Understanding Society – Understanding Society (Ibid.).

[9] Quota set by reference to: Understanding Society – Labour Force Survey 2016 (all those with dependent children across UK).

[10] Quota set by reference to: Understanding Society – National Readership Survey 2016 (adults aged 15+ across GB).

[11] Quota set by reference to: Understanding Society – ONS 2014-based National Population Projections (0-17s across UK).

[12] Quota set by reference to: Understanding Society – ONS 2014-based National Population Projections (0-17s across UK).

Individuals were targeted using profiling data to achieve a best match with the quota criteria above. Of the 2499 responses received to the online (panel) survey, a total of 169 respondents were screened out as they no longer met the quota criteria. A further 248 respondents were rejected as over quota (the quota they would fit into was full). A total of 133 respondents abandoned the survey after starting it, and a further 30 cases were removed from the data at the quality control stage. This resulted in a final usable sample of 1919 respondents. The average interview length was 12 minutes.

b. Supplementary sample

CHILDWISE has a network of supervisors and their associated interviewers across the UK, used to recruit to face-to-face research, who we called on to help for this project. The supplementary sample target was 100 face-to-face interviews with parents of 0 to 17 year olds, who use the internet weekly or less often (parent's usage). The proposal to recruit 100 parents (5%) for the supplementary sample was based on a combination of the following statistics:

- Figures reported by the Office for National Statistics[13] suggested that among adults aged 25 to 64, 96% had used the internet in the last three months, while 3.7% were lapsed users (defined as using the internet more than three months ago) or non-users. Using this definition, 5% of the total sample (100 parents) would cover this comfortably. However, while these statistics were up to date, the data was *not* provided for parental status.
- In Wave 2 of Understanding Society: The UK Household Longitudinal Study (2010-2012)[14] data *were* provided for parental status. Figures reported in the study suggested that 18.5% of parents aged 16 to 65+ used the internet once a month or less. However, given that the data is out of date by up to 7 years, it was highly likely that the proportion of parents who used the internet this infrequently was now far fewer than a fifth and closer to the 5% proposed based on ONS data. Furthermore, data from Understanding Society indicated that there was almost no difference in internet use between parents and non-parents up to age 50, (differences between parents and non-parents are most apparent from age 60+, when the sample size of parents with dependent children is very small).
- The lack of a discernible difference in internet use between parents and non-parents indicated in *Understanding Society*, as well as the date of the study itself, therefore justified the recruitment of 100 parents (5%) in line with the more up to date figure of 3.7% reported by ONS.

For the face-to-face interviews, the rationale for recruiting parents that were low and non-internet users, including those using up to weekly, was based on the following statistics and information:

- Figures reported by the statistics office of the European Union, Eurostat,[15] indicated that 88% of individuals in 2016 accessed the internet daily or more, while 5% used at least once a week (but not every day), and 2% used less than once a week.
- While the online panel provider does not collect data about the panellists' frequency of internet use, by virtue of being an online panel, members would be using at least weekly, with the majority using daily and several times a day (equivalent to the 88% reported by Eurostat).

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[13] ONS 2017 Internet Users in the UK
(https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2017).
[14] University of Essex. Institute for Social and Economic Research, NatCen Social Research and Kantar Public, [producers]: Understanding Society: Waves 1-6, 2009-2015 [computer file]. 8th Edition. Colchester, Essex: UK Data Service [distributor], November 2016. SN: 6614.
[15] Eurostat – Frequency of internet use among individuals in the United Kingdom in 2016. Graph available via Statista, dataset available via Eurostat.

- With panel members therefore primarily covering at least weekly to almost all the time, the face-to-face sample would therefore consist of those that used at least weekly to never.
- Given that the proportion of adults in the population using at least weekly was only 5%, the likelihood of a crossover between panel members and face-to-face recruits using with this frequency was small. Furthermore, including parents in the face-to-face sample who use with this frequency allowed us to include those that may, for example, go online weekly to pay for school meals, check on their child's homework, and do other necessary school-related admin/activities but who would otherwise be defined as a low internet users.

Interviewers recruited using various methods including using their own networks, snowballing, on-street recruitment, and recruitment during other projects. Because of the difficulty in recruiting this sample, each interviewer had a quota of just five respondents, although some interviewers took on up to two of these quotas. To qualify for interview, respondents must have been the parent of a child aged 0 to 17 that they considered they had regular responsibility for, and must have used the internet weekly or less often. Each quota of five interviews required the following, non-interlocking criteria, generally as per the online sample, but less granular because of the low numbers involved and difficulty of recruitment:

Region	Quotas divided up regionally and nationally, to include all nine Government Office Regions of England, plus Scotland, Wales and Northern Ireland
Parent's gender	Female (3) / Male (2)
Parent's age	18-34 (1) / 35-44 (3) / 45-65 (1)
Ethnicity	White (4) / Ethnic minority (1)
Socio economic status	Given that non and low internet users were likely to be from lower socio-demographic groups, we did not impose a quota for this criterion
Child's gender	Boy (2/3) / Girl (2/3) – rotated for balance
Child's age	0-4 (1/2) / 5-8 (1) / 9-12 (1) / 13-17 (2/1) – rotated for balance
Internet usage	Never or hardly ever (2) / Monthly or weekly (3)

Interviewers matched these criteria on a best efforts basis. Interviews were carried out via pen and paper questionnaires. After an initial set of recruitment and profiling questions that were administered by the interviewer, the respondents were allowed to complete the rest of the survey themselves, to match the online self-completion method of the main sample as much as possible. Once complete, questionnaires were quality checked and data processed in house. Quality checking resulted in a total of five questionnaires being rejected.

Final sample

The combined total sample size achieved was 2032 (1919 online main sample, 113 face-to-face supplementary sample). The extra 19 online sample and 13 face-to-face sample were a product of initial oversampling, and over achievement of quotas. The breakdown of the total sample by the sampling criteria, showing target and actual proportions achieved, is set out in the tables below:

REGION	Target %	Actual %
North East	3	4
North West	10	10
Yorkshire and Humber	9	9
East Midlands	7	7
West Midlands	9	10
East of England	8	9
London	17	15
South East	11	12
South West	7	7
Scotland	7	8
Wales	6	6
Northern Ireland	6	3

ETHNICITY	Target %	Actual %
White	84	88
Asian	9	7
Black	4	3
Mixed	1	2
Other	2	1

SES	Target %	Actual %
A	4	6
B	23	22
C1	28	29
C2	20	22
D	15	14
E	10	7

PARENT AGE	Target %	Actual %
18 to 24	3	2
25 to 34	23	23
35 to 44	43	43
45 to 54	28	27
55 to 64	4	4

CHILD GENDER	Target %	Actual %
Male	51	53
Female	49	47

CHILD AGE	Target %	Actual %
0 to 4	28	27
5 to 8	24	23
9 to 12	22	23
13 to 17	26	27

PARENT GENDER	Target %	Actual %
Male	42	41
Female	58	59

In addition, the supplementary sample had a quota imposed for frequency of internet use, which resulted in the following sample proportions for that sample:

INTERNET USE	Target %	Actual %
Never of hardly ever	40	37
Monthly or weekly	60	63

Weighting

The final sample differed from the target sample mainly in the following areas:

- Less sample from Northern Ireland than targeted (6% target, 3% delivered)
- More sample from the White majority than targeted (84% target, 88% delivered)
- Less sample from the E socio-economic group than targeted (10% target, 7% delivered)

However, after further discussion, it was decided that the sample was sufficiently representative, and that weighting would only fix minor errors but potentially cause unnecessary distortion of the data.

Demographic breaks

Socio-economic status (SES)

In order to determine socio-economic status, respondents were asked:

"Please **indicate** to which occupational group the Chief Income Earner in your household belongs, or which group fits best. This could be you: the Chief Income Earner is the person in your household with the largest income. If the Chief Income Earner is retired and has an occupational pension please answer for their most recent occupation. If the Chief Income Earner is not in paid employment but has been out of work for less than 6 months, please answer for their most recent occupation."

They were then given the following options and asked to select one:

1	Semi or unskilled manual work (e.g. Manual workers, all apprentices to be skilled trades, Caretaker, Park keeper, non-HGV driver, shop assistant)	D
2	Skilled manual worker (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/ Ambulance Driver, HGV driver, AA patrolman, pub/bar worker, etc)	C2
3	Supervisory or clerical/ junior managerial/ professional/ administrative (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc)	C1
4	Intermediate managerial/ professional/ administrative (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, middle manager in large organisation, principle officer in civil service/local government)	B
5	Higher managerial/ professional/ administrative (e.g. Established doctor, Solicitor, Board Director in a large organisation (200+ employees, top level civil servant/public service employee)	A
6	Student	C1
7	Casual worker – not in permanent employment	E
8	Housewife/ Homemaker	E
9	Retired and living on state pension	E
10	Unemployed or not working due to long-term sickness	E
11	Carer of other household member	E

Index of deprivation

Small Area Deprivation Index of Material Deprivation is based on The Townsend Material Deprivation devised by Townsend et al (1988). It was provided for us by UK Geographics, based on postcode data provided by survey respondents and is calculated based on the following four Census 2011 variables:

- Percent of households without car,
- Percent of households with more than one person per room – overcrowding,
- Percent of households not owning home,
- Percent of economically active people unemployed.

The four variables are combined to produce the overall score for the whole of UK. This score is calculated for the UK Geographics' Primary Sampling Unit (PSU) which we use to select samples for face-to-face surveys. UK Geographics' PSU is a small geographical area made of 2-3 original Census 2011 Output Areas. The final score was re-scaled to range from zero to 100 for easier understanding of the scores relative values. The scores provided reflect the relative deprivation of an area based on similar areas in UK. In practice only relative rank of scores is meaningful i.e. the higher the index score, the more deprived an area is thought to be, but it cannot express the amount of deprivation it experiences.

Additional demographic groupings

In the analysis, responses to survey questions 5 through 44 (inclusive) were measured against the following demographic criteria:

- Parent gender
- Parent age group
- Parent internet use
- Socio-economic status
- Child gender
- Child age group

The following variables were created in SPSS to describe these demographics:

pgend

Parent gender, where Man was coded as 0, and Woman was coded as 1.

page4

The initial survey broke down the respondents into five parent age groups: 18-24, 25-34, 34-44, 45-54, and 55-65. Because the 18-24 age bracket only had 41 respondents, the 18-24 and 25-35 groups were combined:

- 18-34: 514 respondents, coded as 1
- 35-44: 883 respondents, coded as 2
- 45-54: 550 respondents, coded as 3
- 55-65: 85 respondents, coded as 4

pdaily

Parents were divided into two categories based on their answer to survey Question 5: 'How often do you use the internet on any device/in any place?' Parents who responded: never, hardly ever, at least monthly, and at least weekly were grouped into 'Less than daily use' (coded as 0). Parents who responded: daily or almost daily, several times a day, and almost all the time were grouped into 'Daily use or more' (coded as 1).

ses4

Respondents were grouped according to the socio economic status of their household into categories A, B, C1, C2, D, and E based on responses about their chief income earner explained above.[16] For the analysis groups A and B were combined, as were groups D and E, to produce four SES categories with sufficient numbers in each:

- AB: 573 respondents, coded as 1
- C1: 584 respondents, coded as 2
- C2: 443 respondents, coded as 3

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[16] The ABC1C2DE approach was developed by the National Readership Survey, now maintained by the Market Research Society.

- DE: 432 respondents, coded as 4

cgend

Child gender, where Boy was coded as 0 and Girl was coded as 1.

cage4

Child age was grouped into four age categories in accordance with Understanding Society – ONS 2014-based National Population Projections (0-17s across UK). With the following distributions:

- 0-4: 543 respondents, coded as 1
- 5-8: 463 respondents, coded as 2
- 9-12: 470 respondents, coded as 3
- 13-17: 556 respondents, coded as 4

For single code survey response questions, or multiple coded response questions in the form of a scale, the mean was calculated in SPSS against each demographic variable, alongside ANOVA statistics to test for significance.

For multi-code response survey questions, a crosstab was produced in SPSS measuring each demographic variable against each response option, accompanied by a Pearson chi-squared test of significance.

Additionally, for selected multiple coded questions, the variable qxxsum was created to total the number of responses that a parent selected for a given question, as appropriate. Each 'sum' variable was calculated in SPSS against each demographic variable, alongside ANOVA statistics to test for significance.