Department for Culture Media & Sport

UNIVERSITY OF OXFORD

DIGITAL ENGAGEMENT RESEARCH WORKING GROUP

Benchmarking and tracking digital engagement in the UK: Building a standardised and shared set of measures

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1. Introduction

1.1 Summary

This paper outlines proposals for a standardised and shared set of measures for benchmarking and tracking digital engagement in the UK. It describes the issues considered in developing the shared set of measures and the rationale for our decisions. Following an examination of existing research on digital engagement and a review of existing measures, we propose two categories of measures of digital engagement. First, a set of five core measures that form a scale of digital engagement. We anticipate that these items are few enough that they could be included in almost any study. The core items are broad measures of digital engagement. Second, in order to provide more fine-grained assessments in important areas we propose a set of optional measures. These are scales that can be included whenever researchers need to assess particular digital outcomes.

The measures span three categories: digital outcomes, economic outcomes, and health and social outcomes. These categories correspond with the newly-developed Digital Inclusion Outcomes Framework. The framework is intended as a single, shared template for benchmarking and tracking digital engagement in the UK, and against which all digital engagement activities can be evaluated at local project and programme levels. It was conceived and developed by the Government Digital Service (GDS) Digital engagement Research Working group, which brings together representatives from academia, government, private sector organisations and charities.

1.2 The challenge of existing studies

At present, a wide range of studies use many different measures to quantify all things digital. Despite the wealth of data, it is limited in two important ways. First, no existing studies explicitly measure digital engagement per se. Although these studies measure many things that relate to digital engagement (such as access, use, skills etc.) there is currently no consensus on which measures or indicators should be used to track our progress as a sector. Furthermore, there has been a tendency to use single indicators, usually binary measures such as household access or use/non-use, and there is an emerging realisation that people differ greatly in the extent to which they are able to take advantage of the Internet. Therefore, such binary, yes/no items oversimplify digital

engagement. What is needed is a more diverse set of measures that incorporate items such as digital skills and the benefits people get from being online, in order to measure and track digital engagement.

Second, while a range of measures are currently being used to track all things digital, there is a lack of consistency between surveys, in the measures used and within surveys over time, which limits comparability and our ability to track change over time. Part of the challenge relates to the difficulty of 'future-proofing' measures; rapid change in digital technologies may render some measures out-dated and in need of being replaced.

The digital engagement sector needs a consistent way of tracking progress against our targets. This requires consensus on a valid indicator of what we mean by digital engagement. A standardised and shared measurement framework would add value in a number of key ways. It would:

- Contribute towards a shared understanding and common goal. It would clearly define what is meant by 'digital engagement' so that discussions – and actions - can proceed on this common basis.
- Serve to define, and enable us to spread, best practice in measurement across the sector. It would provide a minimum standard of measurement quality for any study.
- Enable reliable comparability. Results from different studies would be readily comparable with each other, including comparing the same study across time.
- Facilitate tracking progress and targeting resources. The government, private organisations and charities are putting a lot of money and activity into improving digital engagement, and a standardised measurement framework will enable us to assess whether the effort is succeeding, and where to target future investment.
- Finally, and quite fundamentally, we believe that digital engagement is a key component of modern citizenship and there is a wider societal value to be gained by tracking it.

1.3 Review of existing measures

We undertook an extensive review of current studies that collect data relevant to understanding and tracking digital engagement. We focused primarily on studies of individuals or households. Studies of digital use and capability in organisations, such as small businesses and charities, were out of scope for this piece of work. Others are examining organisations and efforts will be made to coordinate with them later. We deliberately included a wide range of measures, starting from the recognition that digital engagement needed to move beyond simple, binary measures of use/non use.

We undertook to catalogue, categorise and classify existing measures. As a first step in this process, we assembled questionnaires from four of the most commonly referenced surveys into a single document so that they can be compared. Questionnaires were from:

- Oxford Internet Survey (2013 Questionnaire)
- Ofcom Media Literacy (Adult 2014 Questionnaire)
- ONS Internet Use (Labour Force Survey 2014 questionnaire; Individual and Household Access 2014 – Opinions and Lifestyle Survey questionnaire module)
- BBC Media Literacy (2012, Sep 2013/Mar 2014, and May 2014 questionnaires)

The initial review yielded over 100 pages of items from across the questionnaires. We carried out a rapid review and analysis of this full catalogue of measures used.

We reviewed how these measures were constructed. We tried to use existing measures whenever possible because they have tried and tested language, and they already come with baseline data. Our scales are constructed using existing items.

1.4 A key tension

The Research Working Group identified a key tension, broadly between the breadth versus number of items to include in a standardised framework of measures. In a survey every item is costly so in order to produce measures that will be widely adopted we need to limit our recommendations to very few items. On the other hand, good measurement often requires many items (and there is a general consensus among partners that we need a diverse set of measures to build a well-rounded understanding of digital engagement). The solution we propose is to develop and promote two sets of measures - a *core* set of five common items and a broader set of *optional* items for measuring various things.

Items that were to be included in a list of core measures were assessed against a number of broad criteria:

1. Conceptual considerations: Items should validly reflect our understanding of digital engagement. Digital activity is a means to an end; that is, we are focused on the outcomes from being online. These outcomes provide British citizens with goods and services faster, more easily, cheaper, or in other ways supply real, concrete benefits.
2. Technical considerations: Items should be reliable and replicable.
3. Applicable: Items need to be relevant to national surveys as well as local initiatives.
4. ‘Future proof’: Items should remain relevant in context of rapid technological change.

5. Distributed: Items should be available to measure all of the benefits that the Research Working Group identified as desirable outcomes from online activity.

1.5 Table of measures

Below are the outcomes and the proposed measures.

	Core items	Optional items
Digital outcomes	Internet use. Capability. Willingness to explore. Value. Feeling digitally included. *[Excluded items:* *Safety* *Time]*	Locations of use. Devices used to access the Internet. Attitudes toward technology.
Economic outcomes		Online employment activity and outcomes. Commercial uses of the Internet Attitudes toward online commercial activity.
Health & Social Outcomes		Online health information. Fun, leisure and entertainment online. Communication & connecting. Social network sites. Maintaining and renewing relationships. Use of public services.

2. Core Measures

The goal of the core measures is to develop a short definitive scale for measuring and tracking digital engagement. The scale not only captures use, but it can also be consistently used for many years. We aimed for an omnibus measure of digital engagement that can be used for the next ten years.

We agreed to start with a core of five items. These form a scale to measure not just the binary question of use or non-use, but also the question of how effectively a respondent will be able to take advantage of the Internet. Drawing on existing measures, and in consultation with partners, we developed items for the following five areas:

1. Internet use
2. Capability
3. Willingness to explore
4. Utility
5. Feeling digitally included

The items proposed below are all self-ratings. It is important to be clear that we understand the weaknesses of each item. Most concepts would be more accurately measured by a scale of 5 or more items. If your survey needs more detail and you have space for additional items then we provide longer scales, but every additional item is costly, and many surveys do not need more detailed measures. We therefore suggest these items as the basis. They will produce consistent, comparable results across surveys. Comparison of your results with other UK surveys is meaningful. We can measure not only digital engagement, but also change in digital engagement over time.

The following symbols are used to indicate the source of each item: **OXIS** = OxIS, **OFCOM** = Ofcom. They are printed following the item.

Item 1. Internet use

If you can only use one item, This is probably the single best. It simply asks respondents if they use the Internet. This item is designed to be used as the first in a series about the Internet. Consequently, to improve reliability, it reminds respondents of all the many ways and places that they might use the Internet.

People use the Internet on computers, laptops, tablets, smartphones, games consoles and televisions. ***Do you, yourself, personally use the Internet*** *on whatever device at home, work, school, university or elsewhere or have you used the Internet anywhere in the past?* **OXIS**

Yes, current user	1
No, but used it in the past	2
Never used the Internet	3

Item 2. Capability.

Competent people will be better able to use the Internet to their own advantage, so skills are a crucial part of being more included. **OXIS**

How would you rate your ability to use the Internet?

Excellent	5
Good	4
Fair	3
Poor	2
Bad	1
Don't know/can't say	-3

Item 3. Willingness to explore.

People who are more willing to explore new websites will be more willing to expand their digital skills and the range of their uses of the Internet. This includes using government websites.

When you go online using any type of computer (such as a PC, laptop or tablet computer like an iPad), a mobile phone, a games console or a media player, would you say that you: **OFCOM**

Only use websites that you've visited before	1
Use maybe one or two sites that you haven't visited before	2
Use lots of websites that you haven't visited before	3
Don't know	-3

Item 4. Value.

People for whom the Internet is more important are more motivated to use it and they are more likely to benefit from it. Notice that this is a broad measure of digital outcomes.

People use the Internet for many things: entertainment, information gathering, staying in touch with friends and relatives, keeping up with news, posting photos, email, and many other things. Considering all the things you do on the Internet, for you, personally, how ***important*** *is the Internet?* **OXIS**

Essential	5
Important	4
Neither important nor unimportant	3
Not so important	2
Completely unimportant	1
Don't know	-3

Item 5. Feeling digitally included.

People who have a subjective feeling that they benefit from the Internet are more likely to be enthusiastic users and willing to use government websites.

People have different opinions about the Internet. To what extent do you agree or disagree with the statement "The Internet makes my life easier." **OFCOM**

Strongly agree	5
Agree	4
Neither agree nor disagree	3
Disagree	2
Strongly disagree	1
Don't know	-3

Excluded items

Two additional items were considered for inclusion in the scale, but a statistical examination showed that they do not fit with the prior items. The items are presented below, followed by a brief principal components analysis (PCA). These items came out as separate dimensions on the PCA, so they don't really belong with the other items.

Safety

The Internet is also a source of dangers. People who can protect themselves from those dangers are better able to benefit from the Internet. Here is an item:

How would you rate your ability to protect yourself from ***bad experiences online*** *like viruses, spam or identity theft?* **OxIS**

Excellent	5
Good	4
Fair	3
Poor	2
Bad	1
Don't know/can't say	-3

This measure is not duplicated exactly in OxIS, but the survey does ask about concern for bad experiences, action taken to prevent bad experiences and whether respondents experienced bad things. All these measures come out as a separate dimension on

principal components analysis. This means that bad experiences are separate from general skills or utility or experience online. They really don't belong together, and we therefore recommend that it not be included.

Time

People who spend more time on the Internet gain experience and are better able to benefit from the Internet.

Considering all of your personal uses of the Internet at home, work, school or elsewhere, which of these best describes your use of the Internet? **OxIS**

More than once a day	5
Daily	4
Weekly	3
Monthly	2
Less than once a month	1
Don't know	-3

While the exact item is not used in OxIS, the survey does ask how long respondents have been online (QC3). Like safety, this comes out as a separate dimension on the PCA. This means that length of time online doesn't belong with the general skills, utility or experience online items. We recommend that it not be included.

We can illustrate the problem with a pca including both bad experiences and time online. I include only the factor loadings output. The first 3 components are the important ones. They have eigenvalues of 1.7, .96 and .95. You can see that the first component does not dominate the pca as much as we would like. The eigenvalues of the second and third component are uncomfortably close to the conventional cut-off of 1.0.

```
. pca u_ability impentnet ageasy u_cerunpleas usedyr6

Principal components/correlation                  Number of obs    =      1718
                                                  Number of comp.  =         5
                                                  Trace            =         5
    Rotation: (unrotated = principal)             Rho              =    1.0000

  ------------------------------------------------------------------------------
     Component |   Eigenvalue   Difference         Proportion   Cumulative
  -------------+----------------------------------------------------------------
         Comp1 |      1.70772      .746155             0.3415       0.3415
         Comp2 |      .961565     .0114836             0.1923       0.5339
         Comp3 |      .950081      .225158             0.1900       0.7239
         Comp4 |      .724924     .0692135             0.1450       0.8689
         Comp5 |       .65571            .             0.1311       1.0000
  ------------------------------------------------------------------------------
```

Here are the rotated factor loadings from the first three components. You can see that safety (u_cerunpleas) and experience (usedyr6) load on their own components, not on the first component.

```
. rotate, varimax kaiser

Rotated components

    -------------------------------------------------------------
        Variable |    Comp1     Comp2     Comp3 | Unexplained
    -------------+-----------------------------+-------------
       u_ability |   0.3189    0.5070   -0.0214 |       .4224
       impentnet |   0.7000   -0.0158    0.1270 |       .3466
          ageasy |   0.6074    0.0332   -0.1199 |       .4456
    u_cerunpleas |  -0.0057    0.0010    0.9842 |      .02238
         usedyr6 |  -0.1984    0.8612    0.0185 |       .1437
    -------------------------------------------------------------
```

This is consistent with the item analysis with and without the safety and experience variables. First, the item analysis with the safety and experience variables. Notice that the safety and experience variables don't correlate with any other variables. This is consistent with the pca, above.

```
. alpha u_ability impentnet ageasy u_cerunpleas usedyr6, item

Test scale = mean(unstandardised items)

                                                      average
                          item-test     item-rest      interitem
Item         |  Obs Sign  correlation   correlation    covariance      alpha
-------------+------------------------------------------------------------
u_ability    | 1826   +      0.5837        0.3457       .2309593      0.4401
impentnet    | 2599   +      0.6911        0.0216       .1430684      0.3820
ageasy       | 2501   +      0.7024        0.4777        .153177      0.3364
u_cerunpleas | 1797   -      0.4653        0.1355        .303882      0.5408
usedyr6      | 1769   +      0.5954        0.1734       .2535082      0.5172
-------------+------------------------------------------------------------
Test scale   |                                          .2187782      0.5083
-------------------------------------------------------------------------
```

Now without: notice the alpha is .59. Not great, but a lot better than before.

```
. alpha u_ability impentnet ageasy, item

Test scale = mean(unstandardised items)

                                                      average
                          item-test    item-rest      interitem
Item         |  Obs  Sign  correlation  correlation    covariance      alpha
-------------+------------------------------------------------------------
u_ability    | 1826    +      0.6902       0.3433       .6946889      0.6430
impentnet    | 2599    +      0.8756       0.5254        .162229      0.3171
ageasy       | 2501    +      0.8051       0.5641       .2521067      0.3061
-------------+------------------------------------------------------------
Test scale   |                                           .403972      0.5876
```

---

3. Optional Measures

Each section begins with a set of suggested measures. Some sections include analysis of the measures and some questions. I use the following symbols to indicate the source of each item: **OxIS** = OxIS, **OFCOM** = Ofcom, **ONS** = ONS; **NEW** = new item. They are printed following the item or following the introductory text if an entire block of items is drawn from a single source.

3.1 Digital Outcomes

We begin with three measures of digital outcomes: locations of use; devices used to access the Internet and attitudes toward technology.

3.1.1 Locations of use.

There are many places where people go online. These items ask about seven locations.

Could I ask about all of the places where you access the Internet? Do you currently go online….? [READ OUT. CODE ONE PER ROW. INTERVIEWER CODE 'DON'T KNOW' AND NOT APPLICABLE AS 'NO'] **OxIS**

	No	Yes
a. At home	0	1
b. On the move/while travelling (eg through a mobile phone, tablet or wireless dongle)	0	1
c. Another person's home	0	1
d. At work	0	1
e. At school/At university	0	1
f. Internet Café	0	1
g. Public library	0	1

3.1.2 Devices used to access the Internet.

Let me read off a number of things that some households have, and others do not. Could you tell me if your household has:
[READ OUT. CIRCLE ONE PER ROW.] [PROBE TO OBTAIN CORRECT ANSWERS, RATHER THAN OPINION OF RESPONDENT. MIGHT BE OBVIOUS ON INSPECTION.] **OxIS**

	No	Yes	Don't know
a. A desktop computer	0	1	-3
b. A laptop computer (including a netbook or a Chromebook)	0	1	-3
c. A hand held tablet with a touch screen (eg iPad, Galaxy Tab or Nexus 7)	0	1	-3
d. A hand held reader for books & magazines (e.g. Kindle, Nook)	0	1	-3
e. Games machine (Xbox, Wii, Playstation)	0	1	-3
f. A mobile phone	0	1	-3
g. A TV with a built-in connection to the Internet	0	1	-3

One problem with mobile use is that many people do not realise that they are using the Internet when they read email, look at weather predictions or access a map. The following items remedy this problem by asking about what people do on their mobile. Of course, you may want to ask about other mobile phone uses, but the items below measure Internet use. A 'Yes' response to any of these items indicates Internet use.

FOR THOSE WITH MOBILE PHONES.
Do you use your mobile phone for … [READ OUT. CIRCLE ONE PER ROW] **OxIS**

	Yes	No	Don't know	Not possible on my phone
a. Sending or reading email	1	0	-3	9
b. Post a photo or video online	1	0	-3	9
c. Sending photos	1	0	-3	9
d. Listening to a radio station	1	0	-3	9
e. Finding directions or location	1	0	-3	9
f. Browse or update a social network site	1	0	-3	9
g. Use a software application or "app"	1	0	-3	9
h. Browse the Internet	1	0	-3	9

3.1.3 Attitudes toward technology.

This is an ideal candidate for a scale. We suggest the following items:

People have different views towards technology. Please tell me how much you agree or disagree with each of the following statements:
[READ OUT EACH STATEMENT. CIRCLE ONE ONLY PER ROW] **OxIS**

	Disagree strongly	Disagree	Neither agree nor disagree	Agree	Agree strongly	Don't know
a. When new technologies or gadgets are invented, it is a good idea to try them	1	2	3	4	5	-3
b. Technology is making things better for people like me	1	2	3	4	5	-3
c. I find it difficult to keep up to date with new technology	1	2	3	4	5	-3
d. Often it is easier to do things without using technologies	1	2	3	4	5	-3
e. I do not trust technologies, because they fail when you need them the most	1	2	3	4	5	-3
f. I get nervous using technologies, because I might break something	1	2	3	4	5	-3

This scale is created by averaging all valid items. To make the score easy to interpret, a higher score on the scale means a more positive attitude toward technology, so items (c.), (d.), (e.) and (f.) must be reverse-coded before being averaged. Respondents with at least five valid responses are included in the scale. If a respondent has fewer than five valid responses, their value on the scale should be coded as missing data.

3.2 Economic Outcomes

There are three measures of economic outcomes: online employment activity and outcomes, commercial uses of the Internet, and attitudes toward online commercial activity.

3.2.1 Online employment activity and outcomes

Suggested measures:

Have you ever …? [READ OUT EACH STATEMENT. CODE ONE PER ROW] **NEW**

	No	Yes	Don't know
Searched online for a job?	0	1	-3
Looked online for information about a job?	0	1	-3
Researched online information about potential employers?	0	1	-3
Posted a résumé or profile on a job search website like monster.co.uk or careerbuilder.co.uk?	0	1	-3
Applied online for a job?	0	1	-3
Found a job through the Internet? **OxIS**	0	1	-3

The items above form an ordered scale with three categories:

1. Search for a job
2. Apply for a job
3. Find a job.

The last two categories (applying for and finding a job) are fairly clear. There less clarity as to how to measure searching for a job. The first 4 items are all potential candidates. It may be that all four are useful because they seem to tap into somewhat different dimensions of a job search. Other measures are also possible, like "Search online in a jobcentre or training and employment agency?" or "Answer a job advert posted online?"

The next 2 items measure extensiveness or intensity of the online job search. Ask the next two items *only* of people who report having used the Internet to search for jobs.

How many websites do you use when you search for a job online? **OFCOM**

I only search for jobs through one main website	1
I use from 2 to 5 websites	2
I use more than 5 websites	3
Don't know	-3

How often do you browse online for jobs? **NEW**

Several times a day	5
Once a day	4
Twice a week	3
Once a week	2
Less than once a week	1
Don't know	-3

The next four items measure the effect of the Internet on work and work-home balance.

Do you think that having access to email and the Internet decreases the amount of work-related activity you do at home, increases the amount of work or it doesn't make any difference? [READ OUT. CODE ONE ONLY] **OxIS**

Doesn't make any difference	2
Decreases the amount of work I do at home	3
Increases the amount of work I do at home	1
Don't know	-3

Do you use the Internet while you are at work? [CODE ONE ONLY] **OxIS**

No	0	Skip other work items
Yes	1	

Do you think that having access to email, social networks and the Internet increases the time you spend on personal things at work, decreases the amount of time or it doesn't make any difference? [READ OUT. CODE ONE ONLY] **OxIS**

Increases the amount of time I spend on personal things at work	1
Doesn't make any difference	2
Decreases the amount of time I spend on personal things at work	3
Don't know	-3

Because of your Internet access at work, do you feel that your ability to do your job has improved a lot, improved somewhat, stayed the same, worsened somewhat, or worsened a lot? [READ OUT. CODE ONE ONLY] **OxIS**

Improved a lot	1
Improved somewhat	2
Stayed the same	3
Worsened somewhat	4
Worsened a lot	5
Don't know	-3

3.2.2 Commercial uses of the Internet

There are two suggested components: (1) commercial activity and (2) attitudes toward commercial activity.

Activity: We have tried to be as complete as possible in listing all the possible commercial uses of the Internet.
Attitudes: These describe possible benefits or problems from online shopping.

I'd like you to think about different commercial transactions people do in their everyday lives like banking or shopping. Within the last year, how often have you gone online for the following purposes?

[READ OUT EACH STATEMENT. CODE ONE PER ROW] **OxIS OFCOM**

	Several times a day	Daily	Weekly	Monthly	Less than monthly	Never	DK
a. Buying a product online	5	4	3	2	1	0	-3
b. Making travel reservations/bookings	5	4	3	2	1	0	-3
c. Paying bills	5	4	3	2	1	0	-3
d. Using your bank's online services	5	4	3	2	1	0	-3
e. Comparing products and prices	5	4	3	2	1	0	-3
f. Ordering groceries or food online	5	4	3	2	1	0	-3
g. Selling things online	5	4	3	2	1	0	-3
h. Investing in shares, bonds or funds	5	4	3	2	1	0	-3
i. Buy medicine, either prescribed or non-prescribed medication including vitamin or mineral supplements **ONS**	5	4	3	2	1	0	-3

The item below is a good single-item measure of commercial activity on the Internet.

In an average month, how many times do you purchase products or services online? Do not include payments for your Internet connection or bill payments for non-Internet services like gas or phone. [WRITE IN]

	Times
Don't know	-3

The activity items form a nice scale. They have an alpha of .81 and the principal components analysis shows they are a single component. To create the commercial activity scale, sum the eight items. This produces a commercial activity scale with a

range of 0-40. “Don’t know” responses should be treated as “Never”. However, if more than half of all responses are “Don’t know” then the scale should be set of missing.

```
. pca u_frbank u_frbills u_frbuy u_frcomp u_frfood u_frtravr u_frsell , mineigen(1)

Principal components/correlation                  Number of obs    =      1809
                                                  Number of comp.  =         1
                                                  Trace            =         7
    Rotation: (unrotated = principal)             Rho              =    0.4906

    --------------------------------------------------------------------------
       Component |   Eigenvalue   Difference         Proportion   Cumulative
    -------------+------------------------------------------------------------
           Comp1 |      3.43429       2.5622             0.4906       0.4906
           Comp2 |      .872083      .140923             0.1246       0.6152
           Comp3 |       .73116      .106663             0.1045       0.7196
           Comp4 |      .624497     .0474553             0.0892       0.8089
           Comp5 |      .577042      .164389             0.0824       0.8913
           Comp6 |      .412653     .0643762             0.0590       0.9502
           Comp7 |      .348277            .             0.0498       1.0000
    --------------------------------------------------------------------------

Principal components (eigenvectors)

    ---------------------------------------
        Variable |    Comp1 | Unexplained
    -------------+----------+-------------
        u_frbank |   0.3890 |       .4802
       u_frbills |   0.4143 |       .4105
         u_frbuy |   0.4261 |       .3766
        u_frcomp |   0.3712 |       .5268
        u_frfood |   0.3424 |       .5973
       u_frtravr |   0.3709 |       .5275
        u_frsell |   0.3207 |       .6468
    ---------------------------------------

. alpha u_frbank u_frbills u_frbuy u_frcomp u_frfood u_frtravr u_frsell , index
option index not allowed
r(198);

. alpha u_frbank u_frbills u_frbuy u_frcomp u_frfood u_frtravr u_frsell , ite,

Test scale = mean(unstandardised items)

                                                          average
                            item-test     item-rest       interitem
Item         |  Obs  Sign   correlation   correlation     covariance      alpha
-------------+------------------------------------------------------------------
u_frbank     | 1828    +       0.7581        0.5895        .3729691      0.7942
u_frbills    | 1829    +       0.7696        0.6616         .405719      0.7742
u_frbuy      | 1833    +       0.7644        0.6653        .4172572      0.7751
u_frcomp     | 1831    +       0.6967        0.5508        .4233937      0.7939
u_frfood     | 1831    +       0.6391        0.4990        .4561537      0.8017
u_frtravr    | 1833    +       0.6535        0.5547        .4772357      0.7977
u_frsell     | 1830    +       0.5926        0.4579        .4789179      0.8078
-------------+------------------------------------------------------------------
Test scale   |                                           .4330871      0.8167
------------------------------------------------------------------------------
```

3.2.3 Attitudes toward online commercial activity

Here are some comments that people make about online shopping. Whether you shop online or not, how much do you agree or disagree with the following statements:

[READ OUT EACH STATEMENT. CODE ONE PER ROW] **OxIS OFCOM**

	Disagree strongly	Dis-agree	Neither agree nor disagree	Agree	Agree strongly	DK
a. People have a much wider choice of goods online	1	2	3	4	5	-3
b. The prices of things online are lower	1	2	3	4	5	-3
c. Goods ordered online are difficult to return or exchange	1	2	3	4	5	-3
d. People are uncomfortable with the lack of face-to-face contact when ordering online	1	2	3	4	5	-3
e. It is easy to order products from websites	1	2	3	4	5	-3
f. It's difficult to assess product quality when shopping online	1	2	3	4	5	-3
g. Shopping online is more convenient than in stores	1	2	3	4	5	-3
h. I shop online when I can't buy the product from a local store	1	2	3	4	5	-3

The attitudes items could also be scaled, although some items would need to be reversed. They do not, however, form a neat scale in OxIS 2013. The principal components analysis shows they form two components. This suggests not creating a single scale.

```
. rotate, varimax kaiser

Principal components/correlation                  Number of obs    =       2012
                                                  Number of comp.  =          2
                                                  Trace            =          8
    Rotation: orthogonal varimax (Kaiser on)      Rho              =     0.5494

    ------------------------------------------------------------------------------
       Component |     Variance   Difference         Proportion   Cumulative
    -------------+----------------------------------------------------------------
           Comp1 |      2.56219      .729546             0.3203       0.3203
           Comp2 |      1.83264            .             0.2291       0.5494
    ------------------------------------------------------------------------------
```

Rotated components

Variable	Comp1	Comp2	Unexplained
agchoice	0.5011	0.0420	.3728
agconven	0.4487	-0.0654	.449
agf2f	0.0032	0.5901	.3636
agnotloc	0.3569	0.0046	.6751
agorder	0.4412	-0.0361	.484
agprice	0.4727	0.0548	.4461
agqual	0.0274	0.5540	.4497
agreturn	-0.0353	0.5784	.3648

Component rotation matrix

	Comp1	Comp2
Comp1	0.8994	-0.4371
Comp2	0.4371	0.8994

3.3 Health and Social Outcomes

There are six measures of health and social outcomes: online health activity; fun, leisure and entertainment online, communication and connecting, social network sites, maintaining and renewing relationships, and use of public services.

3.3.1 Online health information

The following six items measure the extent to which respondents use the Internet for health- and medical- related reasons.

Have you ever…? [READ OUT EACH STATEMENT. CODE ONE PER ROW]

	No	Yes	Don't know
a. Made, cancelled or changed an appointment to see a doctor or other healthcare professional online? **ONS**	0	1	-3
b. Looked online at results of medical tests **NEW**	0	1	-3
c. Filled out a health-related form online **NEW**	0	1	-3
d. Found online information that helped you improve your health **OxIS OFCOM**	0	1	-3
e. Used an app on your mobile device (like a tablet or smartphone) to help manage your health?	0	1	-3
f. Used a device that monitors your health on a daily basis, like Fitbit or Jawbone?	0	1	-3

3.3.2 Fun, leisure and entertainment online

The following items measure various leisure and entertainment activities that people do online.

Now I'd like you to think about the routine things you do for personal **entertainment** like playing games or listening to music. How often do you go online for the following purposes? [READ OUT EACH STATEMENT. CODE ONE PER ROW] **OxIS**

	Several times a day	Daily	Weekly	Monthly	Less than monthly	Never	Don't know
a. Downloading music	5	4	3	2	1	0	-3
b. Listening to music online	5	4	3	2	1	0	-3
c. Downloading videos	5	4	3	2	1	0	-3
d. Watching videos, movies or films online	5	4	3	2	1	0	-3
e. Reading for pleasure, e.g. a book, magazine or fanfiction.	5	4	3	2	1	0	-3
f. Looking for jokes, cartoons or other humorous content	5	4	3	2	1	0	-3
g. Playing online games	5	4	3	2	1	0	-3
h. Watching TV programmes online	5	4	3	2	1	0	-3
i. Looking for the latest celebrity news	5	4	3	2	1	0	-3

These nine items form a very nice single scale with an alpha of .87. A principal components analysis shows they are a single component. We can sum them to create an index of fun on the Internet, with a range from 0-45. When creating the scale "Don't know" responses should be treated as "Never". However, if more than half of the responses are "Don't know" then the scale should be set to missing.

```
Principal components/correlation                  Number of obs    =      1798
                                                  Number of comp.  =         1
                                                  Trace            =         9
    Rotation: (unrotated = principal)             Rho              =    0.5099

    --------------------------------------------------------------------------
       Component |   Eigenvalue   Difference         Proportion   Cumulative
    -------------+------------------------------------------------------------
           Comp1 |      4.58892      3.69619             0.5099       0.5099
           Comp2 |      .892729      .123473             0.0992       0.6091
           Comp3 |      .769256     .0946181             0.0855       0.6945
           Comp4 |      .674638     .0954192             0.0750       0.7695
           Comp5 |      .579219     .0944662             0.0644       0.8339
           Comp6 |      .484753     .0353569             0.0539       0.8877
           Comp7 |      .449396      .139244             0.0499       0.9377
           Comp8 |      .310151     .0592091             0.0345       0.9721
           Comp9 |      .250942            .             0.0279       1.0000
    --------------------------------------------------------------------------

Principal components (eigenvectors)

    ---------------------------------------
        Variable |    Comp1 | Unexplained
    -------------+----------+-------------
       u_frdlmus |   0.3683 |       .3774
       u_frdlvid |   0.3602 |       .4045
        u_frgame |   0.2712 |       .6625
        u_frlmus |   0.3816 |       .3318
        u_frlpix |   0.3512 |       .4341
        u_frwmov |   0.3717 |       .3661
         u_frwtv |   0.3422 |       .4627
        u_frjoke |   0.2734 |       .6569
     u_frpopnews |   0.2492 |        .715
    ---------------------------------------

. alpha u_frdlmus u_frdlvid u_frgame u_frlmus u_frlpix u_frwmov u_frwtv u_frjoke u_frpopnews,
item

Test scale = mean(unstandardised items)
                                                        average
                              item-test     item-rest       interitem
Item          |  Obs  Sign   correlation   correlation     covariance      alpha
--------------+-----------------------------------------------------------------
u_frdlmus     | 1835    +       0.7732        0.7048         .756046      0.8509
u_frdlvid     | 1830    +       0.7372        0.6719        .7927532      0.8557
u_frgame      | 1831    +       0.6295        0.4879        .7705172      0.8735
u_frlmus      | 1835    +       0.8174        0.7401        .6893975      0.8453
u_frlpix      | 1834    +       0.7595        0.6671        .7226632      0.8530
u_frwmov      | 1833    +       0.7738        0.7038        .7526348      0.8507
u_frwtv       | 1835    +       0.7263        0.6374        .7575776      0.8559
u_frjoke      | 1829    +       0.6049        0.5014         .817844      0.8675
u_frpopnews   | 1827    +       0.5585        0.4492        .8361114      0.8716
--------------+-----------------------------------------------------------------
```

```
Test scale   |                                                    .7661862      0.8722
-------------------------------------------------------------------------------
```

3.3.3 Communication & connecting

Below are 10 items measuring different ways people communication online.

Now I'd like you to think about the different things people do online. How often do you go online for the following purposes?

[READ OUT EACH STATEMENT. CODE ONE PER ROW] **OxIS**

	Several times a day	Daily	Weekly	Monthly	Less than monthly	Never	DK
a. Check your email	5	4	3	2	1	0	-3
b. Do instant messaging (eg Yahoo! Messenger, Google Talk, or Facebook Chat)	5	4	3	2	1	0	-3
c. Participate in chat rooms	5	4	3	2	1	0	-3
d. Send attachments with your email	5	4	3	2	1	0	-3
e. Make or receive phone calls over the Internet like Skype	5	4	3	2	1	0	-3
f. Read a blog	5	4	3	2	1	0	-3
g. Write a blog	5	4	3	2	1	0	-3
h. Maintain a personal website	5	4	3	2	1	0	-3
i. Post messages on discussion or message boards	5	4	3	2	1	0	-3
l. Check or update your profile on a social network site such as Facebook, LinkedIn or Twitter	5	4	3	2	1	0	-3

The items below measure who people meet online

Now I would like you to think about the role the Internet plays in your relationships with others when you are online, how often do you interact with the following groups of people? [READ OUT EACH STATEMENT. CODE ONE PER ROW] **OxIS**

	Often	Seldom	Never	Don't know
a. People who share your personal interests and hobbies	3	2	1	-3
b. People with different personal interests and hobbies	3	2	1	-3
c. People who share your political views	3	2	1	-3
d. People with different political views	3	2	1	-3
e. People who share your job or occupation	3	2	1	-3
f. People in different jobs or occupations	3	2	1	-3

3.3.4 Social network sites

Social network sites (SNSs) have changed the way many people interact on the Internet. The next set of items asks about specific SNSs, followed by items measuring activity on SNSs. This set of choices should be expanded as use of SNSs expands.

Do you use any of the following? [READ OUT. CODE ONE PER ROW] **OxIS**

	No	Yes	Don't know
a. Facebook	0	1	-3
b. LinkedIn	0	1	-3
c. Twitter	0	1	-3
d. An online dating site like eHarmony or Match.com?	0	1	-3
e. Pinterest	0	1	-3
f. Bebo	0	1	-3
g. MySpace	0	1	-3
h. Google+	0	1	-3
i. Instagram	0	1	-3
j. Any other social network site?	0	1	-3

IF"YES" not coded anywhere, GO TO NEXT SECTION

The next questions are about activities on social network sites. Thinking about all of the social network sites you use, how often do you?
[READ OUT EACH STATEMENT. CODE ONE PER ROW] **OxIS**

	Several times a day	Daily	Weekly	Monthly	Less than monthly	Never	Don't know
a. Update your status (such as posting a Tweet or Facebook update)	5	4	3	2	1	0	-3
b. Update personal information such as your address or where you work	5	4	3	2	1	0	-3
c. Post pictures or photos you, yourself, took	5	4	3	2	1	0	-3
d. Post your writing, stories or any other creative content you authored	5	4	3	2	1	0	-3
e. Comment on someone else's content (e.g., their status, their wallposts, their photos)	5	4	3	2	1	0	-3
f. Re-post and share links, news, videos, or any creative content originally posted by others	5	4	3	2	1	0	-3
g. Click on a link that takes you to a web page	5	4	3	2	1	0	-3
h. Check or change your privacy settings	5	4	3	2	1	0	-3
i. Learn about or follow a politician	5	4	3	2	1	0	-3
j. Join or start a group that discusses politics or political issues	5	4	3	2	1	0	-3
k. Receive news or information	5	4	3	2	1	0	-3
l. Like or follow a social network page sponsored by a commercial company	5	4	3	2	1	0	-3
m. "Like" or promote content that other people post	5	4	3	2	1	0	-3
n. Unfriend, unfollow or drop someone from your network or friends' list	5	4	3	2	1	0	-3

3.3.5 Maintaining and renewing relationships

To what extent does the Internet influence friendships? The items below measure the extent to which people meet friends online and where they meet. The extent to which these will be of interest as optional measures is uncertain, but they do measure some important aspects of online interpersonal connections.

Have you ever found a friend or acquaintance online who you have not seen for a long time? [CODE ONLY ONE] **OxIS**

No	0
Yes	1
Don't know	-3

Have you ever met someone online that you did not know before, through…?
[READ OUT EACH STATEMENT. CODE ONE PER ROW] **OxIS**

	No	Yes	
a. Social network sites (e.g. Facebook, LinkedIn, Twitter, or Bebo)	0	1	**IF YES TO ANY OF THESE, SKIP THE NEXT QUESTION**
b. Online dating site	0	1	
c. Discussion group or bulletin board	0	1	
d. Through a message or comment on a personal website or blog	0	1	
e. Instant Messaging (eg Yahoo! Messenger, Google Talk, or Facebook Chat)	0	1	
g. Email	0	1	
i. Chat room	0	1	
j. Online community (eg Hobby groups, Interest groups)	0	1	

[ASK ONLY IF 'NO' TO ALL IN PREVIOUS QUESTION] So you have never met anyone online that you did not know before? [CODE ONE ONLY] **OxIS**

Never met anyone online	0	**GO TO END**
Met someone somewhere else online	1	**GO TO NEXT QUESTION**
Don't know	-3	**GO TO END**

IF EVER MET SOMEONE ON THE INTERNET NOT KNOWN BEFORE
How many people have you met online that you did not know before?
[CODE ONE ONLY] **OxIS**

Less than 5	1
Between 6 and 20	2
Between 21 and 50	3
More than 50	4
Don't know	-3

When you first met them online were any of these people…?:
[READ OUT. CODE ONE PER ROW] **OxIS**

	No	Yes	Don't know
a. Users of a website which was dedicated to a hobby or interest that you shared	0	1	-3
b. Friends of friends	0	1	-3
c. Complete strangers	0	1	-3

Thinking back to the all the people you have met online, have you gone on to meet any of them in person? [CODE ONLY ONE] **OxIS**

No	0
Yes	1
Don't know	-3

3.3.6 Use of public services

The public services items need a preamble.

The next set of questions mainly concerns your online contact with public authorities and public services. It includes government websites, such as Her Majesty's Revenue and Customs (HMRC) which deals with tax issues, Department for Work and Pensions (DWP), which deals with benefits and pensions issues, and the Passport Office and local authority sites where you can obtain birth, marriage and death certificates. It also includes sites dealing with public education services such as schools and universities, and public health sites such as GPs and hospitals. **OFCOM ONS**

Have you done any of the following in the past year? [READ OUT EACH STATEMENT].

[IF 'YES', ASK:] Did you do this offline, online or have you done it both offline and online? [CODE ONE PER ROW] **OXIS**

	No	Yes, only Offline	Yes, only Online	Yes, both offline and online	Don't know
a. Get information about local council services	0	1	2	3	-3
b. Pay for a local council tax, fine (such as parking fines), rent or service	0	1	2	3	-3
c. Get information about Central Government services, such as benefits, taxes, a driving licence or passport	0	1	2	3	-3
d. Pay for a central government tax, such as income tax, TV license fee, or car's tax disc	0	1	2	3	-3
e. Get information about schools, teachers, homework or education	0	1	2	3	-3
f. Look for information about an MP, local councillor, political party or candidate	0	1	2	3	-3
g. Get information about government policy on issues such as transport or the environment	0	1	2	3	-3
h. Search for a job on Universal Job Match **BBCS**	0	1	2	3	-3

[Ask respondents who answer “yes, online” or “yes, both” to any of the items above]

You said that you go online for government information and services. Which of these are reasons why you do this online? **OFCOM**

	No	Yes	Don’t know
a. It is more convenient	0	1	-3
b. The website is easy to use	0	1	-3
c. It is faster than in person or by phone	0	1	-3
d. It is only possible to do online, it can’t be done in person or by phone	0	1	-3
e. I believe that it is safe to give out my information online	0	1	-3

[Ask respondents who answer “No” or “only offline” to *all* of the items above.]

You said that you do *not* go online for any government information and services. Which of these are reasons why you do not do this online? **OFCOM**

	No	Yes	Don’t know
a. I was not aware you could do this online	0	1	-3
b. The website is too difficult or complicated to use	0	1	-3
c. It takes too long to do things online	0	1	-3
d. It is only possible to do by phone or in person. It cannot be done online.	0	1	-3
e. I prefer to make a phone call	0	1	-3
f. I prefer to talk with someone in person	0	1	-3
g. I trust using paper more	0	1	-3
h. I can get more immediate feedback in person or on the phone	0	1	-3
i. It is not safe to give out my information online	0	1	-3
j. I don’t need any of these government services	0	1	-3

[ask all]
Some people have others go online for them; for example, a friend, relative, a tax adviser or someone else. Did someone go online to a government website for you? **ONS**

No	0
Yes	1
Don’t know	-3

Some people go online for others; for example, to help a friend or relative. Did you go online to a government website to help someone else? **OxIS**

No	0
Yes	1
Don't know	-3