ESS Round 10

Rotating module:
Digital social contacts in work and family life

Module documentation –
Pre-test module development

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Digital Social Contacts module development timetable

Meeting / Testing stage	Dates
1st Question Module Design Team (QDT) meeting	24 September 2018
11th ESS ERIC National Coordinators (NC) Forum	20-21 November 2018
11th ESS ERIC Scientific Advisory Board (SAB) meeting	21 January 2019
2nd QDT meeting	28 February 2019
12th ESS ERIC NC Forum	4-5 April 2019
Pre-test (omnibus and cognitive interviews)	**April-May 2019**
3rd QDT meeting	20 September 2019
Pilot	**October-December 2019**
13th ESS ERIC NC Forum	19-20 November 2019
4th QDT meeting	7 February 2020

1 Digital Social Contacts in Work and Family Life

Digitalization has led to major changes in communication both in work and family life. On the one hand, great optimism exists regarding the implications of digital social contacts, e.g., via smartphone, for increased efficiency of communication and improved relationship quality due to new possibilities of contact. On the other hand, major concerns include a decline in family or workplace solidarity as well as greater distractions from family or work interactions and tasks. Rejecting any technological determinism which forecasts the same consequences from digitalization for all individuals in all countries, we suggest a rotating module for Round 10 of the ESS which 1) identifies different dimensions of digital social contact (frequency, content, costs and benefits involved) to allow for a broader understanding of digital phenomena, and 2) creates new possibilities from a European country-comparative perspective for multivariate analyses of the determinants of digital social contacts (e.g., social inequalities) and their consequences, especially for relationship quality, work-life balance, and well-being. We propose items on opportunities for access to digital communication (e.g., Internet access at home), the need for them (e.g., lower co-residence) and trust in digital social contact (e.g., privacy concerns), as complements to questions on workplace culture and available country information (e.g. on work related state policies) which are likely to shape individual agency to establish digital social contact in a way that it facilitates work-life balance and encourages relationship quality or well-being. We consider digital social contacts both in the family and at work.

1.1 DEFINITIONS

Face-to-face contact in the family domain refers to in-person communication with family members. We focus on communication with family members as we are interested in the expression of solidarity (support and appreciation), coordination of family activities, monitoring, as well as an "always-on-accessibility" in in this module. We consider major relationships in the family, namely parents and children, irrespectively of whether they are biological children or foster or adopted children.

Digital social contact in the family domain involves communication which is transmitted by electronic and especially computerized technology, and which is not in person communication. We distinguish different types of digital communication taking into account whether the communication is flexible in location, whether it is synchronous communication, and how rich it the communication is when it is synchronous communication (visual vs. audio). Synchronous digital communication can be visual and audio communication at the same time (e.g. on a screen video chatting) or only audio communication which is flexible in location (e.g. on a mobile phone or smartphone) or not flexible in location (talking on a landline phone). For asynchronous communication we refer to contacting someone via text, email or messaging apps.

Face-to-face contact in the work domain refers to in-person communication at the workplace. We focus on communication with supervisors and co-workers as we are interested in the expression of solidarity (support and appreciation), coordination of work tasks, monitoring of job performance, work autonomy in time and place as well as an "always-on-accessibility" in in this module.

Digital social contact in the work domain involves communication which is transmitted by electronic and especially computerized technology, and which is not in person communication. We distinguish different types of digital communication taking into account whether the communication is flexible in location, whether it is synchronous communication, and how rich it the communication is when it is synchronous communication (visual vs. audio). Synchronous digital communication can be visual and audio communication at the same time (e.g., on a screen video chatting) or only audio communication which is flexible in location (e.g., on a mobile phone or smartphone) or not flexible in location (talking on a landline phone). For asynchronous communication we refer to contacting someone via text, email or messaging apps.

Theoretical approach

Why do digital social contacts (DSC) frequency, content, costs, and benefits vary between individuals within and between countries? Why are digital social contacts important for relationship quality, work-life balance, and wellbeing? Why do we expect country or regional differences? Macro level conditions (gauged by country or regional data aggregated from ESS or drawn from other sources) influence the causes and consequences of DSC at the meso- and micro-levels. Opportunities, needs, trust, and influence-based arguments point up mediators of broad influences on the frequency, content, costs and benefits of DSC. These contact characteristics impact a broad array of personal outcomes from work-life balance to general well-being. Theories on the explanation of work-life balance, relationship quality, and well-being are complemented by research on digitalization and its implications. Meso and micro level mediators align with theoretical concepts.

1.2 GENERAL

1.2.1 Internet access

Internet access measures the location where the respondent has access to the Internet. Respondents can choose from a list of several locations and check all that apply. This measurement has been validated in prior research and only been slightly modified (Hargittai & Hsieh 2012).

Expected relationship with other complex and simple concepts
Internet access indicates the opportunity of digital social contacts with work relations (supervisor, co-workers) and family relations (child, parent). Thus, we expect and association of internet access with digital social contact with the supervisor (supdsc), co-workers (cowdsc), child (chdsc) and parent (pardsc). Internet access might further be associated with internet skill (intsk) and privacy concerns using digital technolgies (privcon).

Early development – Comments

Module proposal
- Measurements on technology access and digital skill have been validated in prior research. We suggest questions on access and skill by Hargittai & Hsieh (2012) to measure opportunity for DSC. These questions are appropriate for all respondents in the ESS.

Comments from 1st QDT meeting (24/09/2018):
- The QDT would like to measure the opportunity to access the Internet from home, workplace, and/or on the go (as in 'when away from home or workplace').

Comments from 11th ESS ERIC NC Forum (20/11/2018):
- An NC suggested that respondents are likely to answer "Some other place" as there are many places that provide free internet access. This implies the following question: should we consider that, nowadays, everyone has a solution to connect to the internet or should we add a "No Internet access" option. The QDT responded that it was a good point on no access. Also, they believe that different content (e.g., conversational topics) will be appropriate for work, home, and public settings, thus, justifying the question. Moreover the variable(s) will allow to measure respondents with no internet access even without a 'No internet access' category (same as for item F17a in the ESS core module).
- An NC said that the answer categories are long, which may hinder the perception of the question. That is, there is a risk that the respondent will not read the answers on the card carefully and will not select all the answers that apply to them. The NC proposed asking four separate questions with "Yes / No" options.

Comments from 11th ESS ERIC SAB meeting (21/01/2019):
- An SAB member suggested that, with mobile phones, you would have access at home, at work and on the go. The QDT replied that this is not an issue for the concept.

Comments from 2nd QDT meeting (28/02/2019):

- On digital access, the QDT is interested in focusing on where people have access rather than the technology used.
- It was asked if the question wording should be 'would you be able to use?'. The QDT replied that the question is about access to the internet, not the actual ability to use the internet. Therefore, the wording should be 'have access to'.

Pre-test – Items

D1

CARD 17

At which of the following locations would you have access to the Internet, if you wanted it? Select all that apply.

PROMPT: At which others.

CODE ALL THAT APPLY

Mixed [InternetAccess4 + DKREF]		
MIXED	Mixed [InternetAccess4 + DKREF]	
LIST	InternetAccess4	
	At home	1
	At my workplace	2
	At some other place (such as a library or a friend's house), using their Internet connection	3
	On the go (using my mobile connection)	4
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

Pre-test – Results and comments

Omnibus testing:

- INR is higher in IT (18.7%) than in BG (6.7%) and GB (5.1%). DKs are especially high in IT (13.1%).
- A large majority of people in all three countries have access to the Internet from their home. The second most common option was access on the move.
- In all three countries, fewer respondents report having access to the Internet 'at some other place' than at their workplace. This could indicate that either some respondents are unaware of the alternative opportunities for accessing the Internet available to them, or that the third response category is not working as expected, e.g. because some respondents do not retain the 'if you wanted it' part of the stimulus.
- Almost one in five respondents in IT (18.6%) do not have access to the Internet from any of the available options, while in GB and BG this group is much smaller (5.0% and 6.7% respectively).
- The group with some (1 or 2) Internet access options is larger in GB (51.8%) than in BG (45.5%) and in IT (42.6%). The group with a lot (3 or 4) of Internet access options is larger in BG (47.9%) than in GB (43.2%) and IT (38.9%). The group with some (1 or 2) Internet access

options is larger in GB (51.8%) than in BG (45.5%) and in IT (42.6%). The group with a lot (3 or 4) of Internet access options is larger in BG (47.9%) than in GB (43.2%) and IT (38.9%).

- In GB, male respondents (45.6%) have access to the Internet at workplace more often than female respondents (37.6%).
- In IT, male respondents have access to the Internet at the workplace (40.8% vs 27.7%) and at some other place (33.9% vs 25.5%) more often than female respondents (see Table 3, only statistically significant differences breakdowns are presented).
- In all three countries, differences between age groups are present in the access to the Internet. Generally, older people (over the age of 65) have less often access to the Internet from all available options. Young people (under the age of 25) chose option "on the move" and "at some other place" more often than other age groups.
- In all three countries, differences between groups with different levels of education are present in the access to the Internet. Generally, more educated respondents have access to the Internet more often in all options, while lower educated respondents have access much less often. However, when interpreting the differences, it should be noted that some of the educational categories were under-represented in the omnibus samples.

QDT analysis:
- They found the results show the expected associations.
- Relatively high "Don't Know" for Italy. This should be discussed with the Italian colleagues on whether this is a context problem or perhaps an issue of translation.

CST recommendations:
- The CST investigated further the reasons for the high level of INR in Italy. The CST noted that especially refusals are concentrated amongst specific interviewers and might be more related to the fact that a similar topic was already covered by some socio-demographic items included on the Italian omnibus survey rather than to the quality of the digital social contact item.
- The CST had some concerns about the current formulation: in particular, categories 3 and 4 specify the type of connection in addition to the location, while categories 1 and 2 do not – and therefore they may not be understood as mutually exclusive. In addition, category 3 was not as used as one could expect (see 'Distributions') and this raises some doubts on the salience of the 'if you wanted it' part of the stimulus. These points will need discussion with the QDT.
- The CST also suggested some smaller tweaks to the current wording.

Round 10 – Items
This concept was included in the final Round 10 module (item G1).

1.2.2 Familiarity with (three) internet-related items

Internet skill provides information on the competence of the respondent to use computer and internet-related items which is also important for the opportunity to use digital contact with work and family relations. We suggest a validated measurement which lists different computer and Internet related items (Advanced settings, PDF) and asks how familiar the respondent is with these items (Hargittai & Hsieh 2012).

Expected relationship with other complex and simple concepts:

Internet skill indicates whether digital social contact is an available opportunity of contact with work relations (supervisor, co-workers) and family relations (child, parent) of the respondent. Thus, we expect an association of internet skill with digital social contact with the supervisor (supdsc), co-workers (cowdsc), child (chdsc) and parent (pardsc). Internet access might further be associated with internet access (internac) and privacy concerns using digital technologies (privcon).

Early development – Comments

Comments from 1st QDT meeting (24/09/2018):
- The CST reported earlier unsuccessful proposals on including measures of Internet skills in the core questionnaire. It was suggested this should be more task-based (e.g. sending an email/text) than knowledge-based. Such an item (or items) could be asked to anyone, even though it may feel obvious to many respondents.
- The CST and QDT also discussed how to separate the types of digital social contact; skills or tasks could be ordered by increasing level of difficulty, as in a Mokken scale. This could go in the general part of the module.
- The QDT commented that if the module is focusing more specifically on communication, skill may be slightly less important.

Comments from 11th ESS ERIC SAB meeting (21/01/2019):
- An SAB member commented that the skill items do not relate to skill for digital social contact, and some might be outdated. From this the QDT considered developing some alternatives.

Comments from 2nd QDT meeting (28/02/2019):
- The CST were not convinced the first set of items measure digital social contact skills, but instead measure IT literacy.
- There was a suggestion to change the question wording to 'how familiar are you with xxxx' or 'would you know how to use these?'. The CST commented these wording options are more direct but might get more social desirability bias. It was then suggested 'how confident would you be?' as an option of wording.
- The QDT commented that there will be a need to define what 'understanding' means if this word is used, such as whether respondents do not know how these things fully work but use them all the time. Additionally, people with a lot of knowledge might provide a low answer if they feel they do not fully understand it.
- A decision was made that there will be cognitive interviewing tests from each scale to compare wording (5 respondents get one/5 respondents got the other). In addition, this will be tested in the omnibus (5 from each scale) as the QDT want to know about likely frequency differentials. The CST noted that it needs to be ensured that the question stem and scale categories have same wording – use 'how familiar are you with'
- It was suggested whichever way is the best predictor of association with digital social contact is what the ESS want to use.
- It was noted that, in the cognitive interviews, the items could be reduced to the ones more related to digital social contact.
- D5a: it was noted that respondents might fully understand what a jpeg file is, but not how to use it. Therefore, this would not be measuring skill. The QDT noted that this could be tested in cognitive interviews.

Comments from 12th ESS ERIC NC Forum (04/04/2019):

- An NC asked that digital social contact depends on access, availability and desire, so is it necessary to measure skill, which is ever-changing, or should they rather focus on how people use digital technologies. The QDT responded that there is a question on the use and access of digital technologies, and skill is something different from use even though they are likely to be correlated. Additionally, they noted that there are several publications which show that use of digital technologies is not a good measurement for skill.

- An NC suggested that the 'familiarity' scale is likely to cause inequivalent measurements across countries, as it can be interpreted differently (e.g., familiar as user vs familiar as developer). The QDT replied that the skill item has been investigated in detail and there is no strong evidence suggesting that one method performs better than the other two. Therefore, the QDT will keep the one on familiarity which is commonly used in the literature.

- Another NC noted that selection of digital skills is old-fashioned (e.g., Wiki), especially due to missing social networks. Even if a scale has been validated some years ago, it quickly becomes outdated considering the subject matter. The timeliness of the validation is key. The QDT responded that a factor analysis has shown that not all terms load on one factor. Therefore, they now included only those which relate to one factor and which are less likely to be outdated, such as preference settings and advanced search.

- An NC noted that the current measures do not quite measure either skill or familiarity – and they think it is familiarity they should be focusing on. Whether people are familiar with office software, PDFs, transferring files, Wikis, and so on seems quite an odd selection of activities to measure. Things like 'Advanced search/preference setting' are also very specific to the context in which they are applied. There is currently no measure of whether people actually use social media. It is understood that this can be difficult to sum up in one question but it is suspected that whether someone uses social media or not will be a better predictor of some of the other questions than whether they know what a PDF is. Instead, would it not be better to have a question that asks something like 'Do you ever use social media such as Facebook, WhatsApp, Instagram, Snapchat, Twitter etc.'? This would include just viewing as well as posting. Then perhaps a question or two about familiarity with office software such as Word processing, spreadsheet, and so on. It will already be known about respondents' internet use from the core questionnaire. Perhaps the degree of use of/familiarity with social media could be a better indicator of skill. Looking at the current alternatives, familiarity with PDF might capture the same respondents that know how to use word processing software. The QDT replied that it was decided against mentioning specific social media as these are especially likely to change over time. The skill item has been investigated in detail in the pre-test. There is no strong evidence suggesting that one method performs better than the other two. Therefore, it is suggested to keep the one on familiarity which is commonly used in the literature.

Pre-test – Items

[EXPERIMENT 4 – SPLIT BALLOT DESIGN: We are going to ask questions about Internet skills using different wordings to randomly allocated subgroups within the sample.

Create random split variable EXP4, which will NOT BE SHOWN to respondents. Each experimental group should include approximately 33% of respondents. This variable should be populated at the start of the interview.]

D2a
ASK IF EXP4 = 1
CARD 24

How familiar are you with the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means not at all familiar and 5 means completely familiar with the item. **READ OUT**…Advanced search

Mixed [Familiar5 + DKREF]		
MIXED	Mixed [Familiar5 + DKREF]	
LIST	Familiar5	
	Not at all familiar	1
	Not very familiar	2
	Somewhat familiar	3
	Very familiar	4
	Completely familiar	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D3a
ASK IF EXP4 = 1
STILL CARD 24
How familiar are you with the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means not at all familiar and 5 means completely familiar with the item. **READ OUT**…PDF

Mixed [Familiar5 + DKREF]		
MIXED	Mixed [Familiar5 + DKREF]	
LIST	Familiar5	
	Not at all familiar	1
	Not very familiar	2
	Somewhat familiar	3
	Very familiar	4
	Completely familiar	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D4a
ASK IF EXP4 = 1
STILL CARD 24
How familiar are you with the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means not at all familiar and 5 means completely familiar with the item.

READ OUT…Wiki

Mixed [Familiar5 + DKREF]		
MIXED	Mixed [Familiar5 + DKREF]	
LIST	Familiar5	
	Not at all familiar	1
	Not very familiar	2
	Somewhat familiar	3
	Very familiar	4
	Completely familiar	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D5a

ASK IF EXP4 = 1

STILL CARD 24

How familiar are you with the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means not at all familiar and 5 means completely familiar with the item.

READ OUT…JPEG

Mixed [Familiar5 + DKREF]		
MIXED	Mixed [Familiar5 + DKREF]	
LIST	Familiar5	
	Not at all familiar	1
	Not very familiar	2
	Somewhat familiar	3
	Very familiar	4
	Completely familiar	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D6a

ASK IF EXP4 = 1

STILL CARD 24

How familiar are you with the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means not at all familiar and 5 means completely familiar with the item.

READ OUT… Preference setting

Mixed [Familiar5 + DKREF]		
MIXED	Mixed [Familiar5 + DKREF]	
LIST	Familiar5	
	Not at all familiar	1
	Not very familiar	2
	Somewhat familiar	3
	Very familiar	4
	Completely familiar	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D7a

ASK IF EXP4 = 1

STILL CARD 24

How familiar are you with the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means not at all familiar and 5 means completely familiar with the item.

READ OUT… BCC in email

Mixed [Familiar5 + DKREF]		
MIXED	Mixed [Familiar5 + DKREF]	
LIST	Familiar5	
	Not at all familiar	1
	Not very familiar	2
	Somewhat familiar	3
	Very familiar	4
	Completely familiar	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D2b

ASK IF EXP4 = 2

CARD 25

What is your level of understanding of the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means no understanding and 5 means full understanding of the item.

READ OUT…Advanced search

Mixed [Understanding5 + DKREF]	

MIXED	Mixed [Understanding5 + DKREF]	
LIST	Understanding5	
	No understanding	1
	Little understanding	2
	Some understanding	3
	Good understanding	4
	Full understanding	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D3b

ASK IF EXP4 = 2

STILL CARD 25

What is your level of understanding of the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means no understanding and 5 means full understanding of the item. **READ OUT**…PDF

Mixed [Understanding5 + DKREF]		
MIXED	Mixed [Understanding5 + DKREF]	
LIST	Understanding5	
	No understanding	1
	Little understanding	2
	Some understanding	3
	Good understanding	4
	Full understanding	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D4b

ASK IF EXP4 = 2

STILL CARD 25

What is your level of understanding of the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means no understanding and 5 means full understanding of the item. **READ OUT**…Wiki

Mixed [Understanding5 + DKREF]		
MIXED	Mixed [Understanding5 + DKREF]	
LIST	Understanding5	

14

	No understanding	1
	Little understanding	2
	Some understanding	3
	Good understanding	4
	Full understanding	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

ASK IF EXP4 = 2

STILL CARD 25

What is your level of understanding of the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means no understanding and 5 means full understanding of the item.

READ OUT…JPEG

Mixed [Understanding5 + DKREF]		
MIXED	Mixed [Understanding5 + DKREF]	
LIST	Understanding5	
	No understanding	1
	Little understanding	2
	Some understanding	3
	Good understanding	4
	Full understanding	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

ASK IF EXP4 = 2

STILL CARD 25

What is your level of understanding of the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means no understanding and 5 means full understanding of the item.

READ OUT…Preference setting

Mixed [Understanding5 + DKREF]		
MIXED	Mixed [Understanding5 + DKREF]	
LIST	Understanding5	
	No understanding	1
	Little understanding	2

	Some understanding	3
	Good understanding	4
	Full understanding	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D7b

ASK IF EXP4 = 2
STILL CARD 25

What is your level of understanding of the following computer and Internet-related items? Please choose a number from 1 to 5, where 1 means no understanding and 5 means full understanding of the item.
READ OUT…BCC in e-mail

Mixed [Understanding5 + DKREF]		
MIXED	Mixed [Understanding5 + DKREF]	
LIST	Understanding5	
	No understanding	1
	Little understanding	2
	Some understanding	3
	Good understanding	4
	Full understanding	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

D8aa

ASK IF EXP4 = 3 AND RESPONDENT IS MALE (IF C2 = 1)
CARD 26

Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

He knows how to transfer files from one device to another.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2

	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D8ab

ASK IF EXP4 = 3 AND RESPONDENT IS MALE (IF C2 = 1)

STILL CARD 26

Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

He knows how to use office software (such as word processing applications).

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D8ac

ASK IF EXP4 = 3 AND RESPONDENT IS MALE (IF C2 = 1)

STILL CARD 26

Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

He can help others with their Internet or computer-related problems.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	

	Very much like me		1
	Like me		2
	Somewhat like me		3
	A little like me		4
	Not like me		5
	Not like me at all		6
MISSING_GROUP	DKREF		
	Refusal		77
	Don't Know		88

ASK IF EXP4 = 3 AND RESPONDENT IS MALE (IF C2 = 1)
STILL CARD 26
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

He can use a programming language to programme or write computer code.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

ASK IF EXP4 = 3 AND RESPONDENT IS FEMALE (IF C2 = 2)
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

STILL CARD 26
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

She knows how to transfer files from one device to another.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6

D8bb
ASK IF EXP4 = 3 AND RESPONDENT IS FEMALE (IF C2 = 2)
STILL CARD 26
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

She knows how to use office software (such as word processing applications).

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D8bc
ASK IF EXP4 = 3 AND RESPONDENT IS FEMALE (IF C2 = 2)
STILL CARD 26
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

She can help others with their Internet or computer-related problems.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D8bd

ASK IF EXP4 = 3 AND RESPONDENT IS FEMALE (IF C2 = 2)
STILL CARD 26
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

She can use a programming language to programme or write computer code.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D8ca

ASK IF EXP4 = 3 AND RESPONDENT IS OTHER (IF C1 = 3)
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.
STILL CARD 26

Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

They[1] know how to transfer files from one device to another.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6

Translation notes:
[1] They' meaning a gender neutral term for a person (singular).

D8cb
ASK IF EXP4 = 3 AND RESPONDENT IS OTHER (IF C1 = 3)
STILL CARD 26
Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

They know how to use office software (such as word processing applications).

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D8cc
ASK IF EXP4 = 3 AND RESPONDENT IS OTHER (IF C1 = 3)

21

STILL CARD 26

Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

They can help others with their Internet or computer-related problems.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D8cd

ASK IF EXP4 = 3 AND RESPONDENT IS OTHER (IF C1 = 3)

STILL CARD 26

Now I will briefly describe some people and their use of computers or the Internet. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer.

They can use a programming language to programme or write computer code.

Mixed [Likeme6 + DKREF]		
MIXED	Mixed [Likeme6 + DKREF]	
SCALE	Likeme6	
	Very much like me	1
	Like me	2
	Somewhat like me	3
	A little like me	4
	Not like me	5
	Not like me at all	6
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

Pre-test – Results and comments
[Included in both the pre-test omnibus and the cognitive interviews]

Translation queries:
- Two countries translated 'No understanding' using the first person (e.g. 'I do not understand at all') and that was considered acceptable.
- '(computer and internet-related) items' is difficult to translate and could lead to deviations among translations: e.g. it could be translated as 'things' (DE) / 'terms' / 'concepts' / 'applications' / 'elements' (IT). The CST acknowledged that the term 'item' might need to be translated differently in target languages. The selected term should convey the meaning of 'an object of attention, concern, or interest'.
- 'level (of understanding)' was found to be difficult to translate into several languages. A possible solution for this proposed was 'How much do you understand of …'. The QDT asked if it would help to refer to the translation of 'level of attachment' and/or 'level of education' from the core. The CST replied that translating in the sense of 'degree' or 'extent' would be fine, and the proposed solution would also be okay if all other options do not work.
- It was noted that the answer categories do not fit to the wording of the question. Is the intention really to ask for the understanding of the items or how well respondents know anything about it / know it at all?
- It was commented by a translator that 'level of understanding', translated literally, means technical literacy or computer engineering knowledge on the format. They added that they struggled with the verbs 'understanding' and 'being familiar' as it is not clear which level of understanding / knowledge should be referred to: expert understanding versus layperson understands. They suggested it should be only laypersons' understanding, but this is not easy to express in one verb. The CST acknowledged that the source question wording may be slightly awkward, which is why they are testing alternative versions. They asked translators to translate the answer categories as different levels of understanding/familiarity as much as possible. Ideally, it would be possible to use a translation that conveys understanding/familiarity in general as in the source, without pointing specifically to technical and/or practical expertise.
- D8: In some countries, 'she' or 'he' is not needed (wie, jak przenosić pliki), and so it was asked to have a unisex version. The CST replied that these items use a gender-specific wording mirroring the gender of the respondent as a conscious design decision to counteract potential gender biases in expertise evaluations. If it is possible and the resulting wording is not too awkward, they would be in favour of including a gender-specific pronoun in target languages too, at least for the 'male' and 'female' versions.
- D5a: It was noted that it seemed strange in French to write 'JPEG' without saying 'format' before. The CST replied that, when designing these items, they discussed adding 'file' to JPEG and PDF, but the QDT decided to keep the existing validated scale. Therefore, they encouraged translators not to add any information that might lead respondents to a more specific understanding of the item than in the source and investigate via cognitive interviewing probing whether they were thinking of a file versus the file format in general.
- D6a: A translator commented that as a rule, users encounter 'preferences' or 'settings'. 'Preference setting' is a description of what users do, not an 'Internet related term'. As such, it would be difficult to translate in a way that rings a bell for the respondent. Therefore, they suggested replacing it with 'user preferences'. The CST replied that the source item refers to

'(preference) setting' as a singular noun rather than as a verb. This refers to a user-configurable function or behaviour within a piece of software and may be translated using the most common expression used for this in your language.

<u>Omnibus testing:</u>
- Approximately one third of the omnibus respondents in each country were randomly allocated to each of version A – Familiarity (D2a – D7a), B – Understanding (D2b – D7b) and C – Like me (D8aa – D8cd).
- INR levels are within acceptable parameters across all test countries for all question variants (i.e. no instances of INR>=7).
- It should be noted that INR is lower in BG compared to GB and IT, and this could be due to a questionnaire design flaw that was corrected only before BG fieldwork, i.e. that respondent instructions at D2a/b to D7a/b refer to numbers, which, in accordance with ESS practice, are not present on fully labelled showcards such as the ones used for these items.
- In BG, results on version A and version B are almost the same (except for question B7), while in GB and especially in IT results differ to an extent between versions. Specifically, there is a systematically higher evaluation in version B (if we aggregate categories 'Very familiar' + 'Completely familiar' and 'Good understanding' + 'Full understanding').
- The largest differences (about 10 percentage points) are in IT between options 'Somewhat familiar' and 'Some understanding' at items D2 and D3.
- Respondents receiving version C (vignette-based approach) were routed to a version of the items which reflected their own sex (male, female, other). Only male and female respondents are reported in the tables below due to the small size of the 'other' group (only one respondent in each country self-identified with this group).
- The response distributions for questions D8a/b A to D (male and female):
- INR levels are within acceptable parameters across all test countries for all question variants (i.e. no instances of INR>=7). INR level is higher in BG than in GB and IT for all question variants (and especially for D8aD where it is 6.0% and for D8bD where it is 5.5% in BG). The highest level of INR in GB is 2.2% (D8bB) and in IT 2.8% (D8aC and D8aD).
- In GB and IT, male respondents chose option 'Very much like me' significantly more often than female respondents in all items, while this was not the case in BG.
- In BG, there were statistically significant differences between male and female respondents in questions D3a (PDF) and D6a (Preference settings) and in IT, only in question D4a (Wiki). As in GB, male respondents reported being 'Completely familiar' with these items more often than female respondents.
- It is interesting to note that in all three countries there were no statistically significant differences in responses between male and female respondents in version B.
- In terms of age and education, there were statistically significant differences in all three countries for all questions for both version A and version B (except for questions D4a, D4b, D5a, D6a for education in BG). Older (especially over the age of 65) and lower educated respondents are more likely to choose option 'Not at all familiar' or 'No understanding', while younger (under the age of 35, and in GB under the age of 45) and more educated respondents are more likely to choose option 'Completely familiar' or 'Full understanding'.
- However, it should be noted that the categories are unequal in size and the interpretation of differences between the particular categories is not always possible.

<u>Survey quality predictor:</u>

- Although, comparisons of pairs of items from the DSC module did not show significant improvements of one method with respect to the other, items D2a/b and D3a/b do not have acceptable quality yet.
- Analysis of timestamps related to internet use:
- Presumably, some concepts measured in the DSC module are not equally familiar for all respondents. Those with regular use of digital technology would find the topics about internet skills more familiar than those who do not use digital technology. If this is the case, the resulting statistics from the indicators will be group dependent. To test whether access to digital technology affects the way respondents answer the module, we regressed the time spent answering items measuring internet skills with a measure of internet access.
- We hypothesize that respondents with low internet access would speed up questions about knowledge/familiarity of digital objects: if they were not familiar with online digital communication, they would not be familiar with online digital objects, therefore, these questions would be irrelevant to them. We took frequency of internet access as a proxy to indicate whether respondents are online or not.
- The dependent variable was the sum of the time spent in all items by method. Method A includes items D2a to D6a, Method B includes items D2b to D6b and Method 3, items D8aA-D8aD, D8bA-D8bD and D8cA-D8cD. The difference between Method A and B is the formulation of the question "how familiar" (Method A) and "level of understanding" (Method B) of the different "computer and Internet-related items" and corresponding response item-specific response scales. The rest, like items, number of scale points, or being fully labelled remain the same. Method C, is very different to the previous two, using a 6-point response scale and a portrait form which means that the respondents are presented with a person and shall answer how much they are like this person. Method C was offered with gender specific formulations, i.e. if the respondents states that he is male, he got a description of a man and was asked to say how much he is like him, similar for a woman, and for people who declared themselves as being other (than male or female), they were given a neutral description, hence avoiding any reference to men or women.
- We recoded A1 into three categories (A1rec): Category 1 is formed by those never accessing the internet and those using it only occasionally. Category 2 includes respondents using internet a few times a week. Category 3 is formed by those accessing internet most days or every day.
- With A1rec as the main covariate and we also included sex and age of the respondent as control variables. All models were validated according to common metrics of residuals' analysis. Models resulted in normally distributed residuals, therefore we considered them robust.
- Sex did not show significant effects in any method. The effect of age was moderate across methods: an additional year from the mean age of the sample increased the total time spent in the battery with Method A in ~0.3 seconds, of Method B and Method C in ~0.2 seconds. Although the time spent on these items increases with age, and this may be an indication of difficulty to answer, the effects are negligible to be considered important for questionnaire design.
- However, the effect of internet access is a strong predictor of the total time spent in the scales of computer and internet skills in the three methods. In Method A, the magnitude of the effect is approximately 2:1 for those accessing internet in comparison to offline respondents. For a respondent of any gender around the mean sample age (48.3 years), without internet access, the average time spent in the six questions using Method A is ~18.1 seconds (standard error = ~4.9 seconds). The predicted time increases considerably, ~40.1 seconds if they access internet a few times a week, and to ~38 seconds if they access internet daily, or several times a day.

This finding suggests that having a battery of items does not help to measure computer and internet skills for the offline population.

- Accordingly, with Method A internet access is a strong predictor of the time spent in Method 2, although the effects are more moderate. For an offline respondent close to the average age of the sample the predicted mean is ~24.3 seconds, somewhat larger than in Method A (standard error = ~4.9 seconds). The prediction for a respondent using internet occasionally (few times a week), the mean would increase in ~17.4 seconds, adding up to ~41.7 seconds. For those with frequent internet access (daily or several times a day) the predicted mean is ~40 seconds, a ratio of approximately 2:1 for those accessing internet in comparison to offline respondents.

- Respondents in Method C without internet access had a slightly lower mean than those with frequent or occasional access. The predicted mean was ~24 seconds with a standard error of ~4.7 seconds. Accessing internet a few times a week increases the predicted mean in ~16.1 seconds adding up to ~40.1 seconds. Accessing internet frequently, increased the mean to ~40.4 seconds.

- For people with internet access, there was little variation on the time spent in the battery across the three methods. For the offline respondents there was no difference between Method B and Method C, with a faster total time in Method A. These results suggest that the methods are not having an effect in the time spent on the items, but whether respondents have frequent or occasional access to internet. This is an indication that the battery of items could use less of them or be skipped for the offline respondents. We interpret that online respondents spent more time thinking about these items, whereas for respondents without internet access these items go fast because they are not relevant To gather more information about this interpretation we plot the distribution of the answer categories in Method A, Method B and Method C by internet use (A1rec). Value 1 of A1rec is formed by respondents that "never" access the internet, or that access it "only occasionally". Most of them use category 1 in D2a-D7a ("Not at all familiar") or D2b-D7b ("No understanding").

- We regress the item which took longest in the module D13 with A1rec, age and gender to see if the effects found for the familiarity/understanding items repeat. Only using internet daily/several times a day showed effects, but they were moderate in comparison to the effects shown in the computer and internet skills measures (~5 seconds). This indicates that online respondents, in general, do not take more time answering other questions in the module D, but only those related to computer and internet skills. This may suggest that these questions are complex for those respondents, probably as they are internet users take longer to understand their meaning.

- Our first recommendation is that the battery of question should be revised if it is intended to be asked to all respondents, as there is strong evidence to suggest that some interviewers/respondents are speeding in this subsection because the items are not relevant to them. The behaviour of these items is dependent on group membership (onliners vs. offliners). Another possibility is to skip these questions for those respondents that do not have internet access. As the predicted mean for the total time spent in the three methods, and the distributions are alike, there is no strong evidence to determine which method performs better.

QDT analyses:

Method A (familiarity): -

- The principal factor analysis based on the items listed in the descriptive (without not applicable, refused, don't know) identifies one factor with an Eigenvalue above 1 (Eigenvalue of 4.360).

- The principal factor analysis applying an orthogonal varimax rotation identifies two factors above 1 (Eigenvalue F1: 2.28198; Eigenvalue F2: 2.13094).
- Factor 1 includes advanced search, pdf and preference setting. A separate factor analysis has been performed based on these three items reconfirming the results above. Based on this factor analysis the factor digital skill familiarity has been constructed based on these three items. This factor is used for further analyses. Wiki, jpeg and bcc are not used as they are negatively associated with factor 1 in the factor analysis above.

Method B (Understanding): -
- The principal factor analysis based on the items listed in the descriptive (without not applicable, refused, don't know) identifies one factor with an Eigenvalue above 1 (Eigenvalue of 4.395).
- The principal factor analysis applying an orthogonal varimax rotation identifies two factors above 1 (Eigenvalue F1: 2.37596 ; Eigenvalue F2: 2.07299).
- Factor 2 includes advanced search, pdf and preference setting as factor 1 in digital skill version 1 familiarity. A separate factor analysis has been performed based on these three items reconfirming the results above. Based on this factor analysis the factor digital skill understanding has been constructed based on these three items. This factor is used for further analyses. Wiki, jpeg and bcc are not used as they are negatively associated with factor 2 in the factor analysis above

Method C (Like me): -
- The principal factor analysis based on the items listed in the descriptive (without not applicable, refused, don't know) identifies one factor with an Eigenvalue above 1 (Eigenvalue of 2.70861).
- The principal factor analysis applying an orthogonal varimax rotation identifies one factor above 1 (Eigenvalue F1: 2.22728) and one being a bit below 1 (Eigenvalue F2: 0.60984).
- Factor 1 includes transfer files, use office software and help other with IT problems. A separate factor analysis has been performed based on these three items reconfirming the results above. Based on this factor analysis the factor digital skill like me has been constructed based on these three items. This factor is used for further analyses. Can use programming language is not used as it is negatively associated with the factor in the factor analysis above.
- We suggest choosing the shortened version of skill version 1 familiarity (pdf, advanced search, preference settings). The first version is chosen for the following reasons: the measurement has more often been used in existing research, it is not as workplace oriented as the last one, it shows common association with age, education, and gender, it is not too highly correlated with internet use, it is significant for content of contact, the last skill version results in less robust models even if the last version is more significant for frequency of digital contact, and the shortened version is chosen based on the factor analysis.

UPF analyses
- We want to analyse if the items are indeed measuring the concept of interest, "computer and internet skills", and whether there are differences for respondents depending on the frequency of their internet use. In this Section, instead of analysing timestamps, we look at the measurement models of this battery of items by method. We therefore first describe the data, starting with internet use. We find that respondents in all three countries use the internet most of the days or daily: 78% in Bulgaria (BG), 70% in Italy (IT), and 82% in Great Britain (GB), the smallest group in all three countries uses the internet occasionally or a few times a week (11% BG, 8% IT, 9% GB) and the remaining never (11% BG, 22% IT, 9% GB).

- In order to evaluate the measurement of the concept of interest, we consider the correlations between the items. If they are indeed measuring the same concept of interest, we expect high correlations (≥.7), and if they are measuring the concepts for all respondents, the patterns of correlation for the three different groups of internet use should be similar. Table 35 contains the 25 correlation matrices of the items of the three methods (A, B, and C) for three groups of internet use (never and occasionally, few times a week, most or every day) in each of the three countries. For Italy, we find that the correlation for people who use the internet never or only sometimes, for Method A is very high, in fact so high that they indicate an almost perfect relation between the items. This suggest that the answers to all those items are the same, which makes it redundant to ask for all of them as they do not add more variations to explain the underlying concept. Contrary to the other two countries, where respondents who only use the internet sometimes, show a lower and non-significant correlation between the items of Method A. This by itself indicates that this group is not comparable to those who never or most or everyday use the internet. This aligns to some extent to the analysis of timestamps in Great Britain presented in the last section, there is a difference in the way respondents answer to these items depending on the frequency of internet use. Moreover, overall the correlations are considerably lower in Bulgaria and Great Britain than in Italy. This might be an indication that the concepts cannot be compared across all three countries when using Method A.

- In Method B, we find again that the correlations in Italy are higher than in the other countries. However, the group of respondents that use the internet sometimes in Italy does this time also contain a non-significant correlation (d7b and d2b). The same group in Bulgaria also contains one non-significant correlation (d5b and d4b), while there are four non-significant correlations for the same group in Great Britain. Items are correlated for people who never use the internet and people who use it most or every day but not all for those who use the internet sometimes.

- Regarding Method C, we find that the correlations are overall higher in Italy and that the correlations for respondents that use the internet sometimes contain non-significant correlations in Bulgaria and Great Britain. For Method C the correlations are not as high as in Method A and B, this is an indication that the items are more differentiated in Method C and that having more items does not necessarily help to explain the concept of "computer and internet skills" better.

- In Annex 1, we present the descriptive statistics of the items of all three methods. Even without any statistical test, one can already see that the data is not skewed and hence, confirmatory factor analysis (CFA) is possible. The confirmatory factor model we are conducting for Method A, exemplified for Bulgaria, is illustrated in Figure 2, the model for method B is similar, just the items are different. The model in method C has four instead of six indicators.

- We presented the standardized loadings of the model for each method in the three countries. These loadings can be interpreted as the strength of the relationship between the latent variable of interest (computer and internet skills) and the indicators in the survey. Low numerical loadings are problematic, as they would indicate that the relationship between the concept and the indicators was not strong, but very high loadings are also problematic, they indicate that there is no differentiation among the items. Table 36 shows that with few exceptions most loadings are larger than 0.8, that may be an indication of redundancy in the concepts measured by each item. Note that across the three countries, the fourth item in Method C shows the lowest relationship with the latent concept.

- We summarize the global fit indices for the models usually used to evaluate CFA. These indices are related to sample size and model complexity and should, if at all, only used to compared nested models. As Method A and B have similar sample size and model configuration (being one factor model with 6 items), we can compare them. For Method C we

cannot rely on the global fit indices. The values considerable acceptable for global fit indices are 0.06 or lower for RMSEA and 0.90 or higher for CFI (Chen, 2007; Hu & Bentler, 1999) and Chen (2007) suggests a criterion of a −.01 change in CFI, paired with changes in RMSEA of .015 and SRMR of .030 an improvement. Following these, we find that the models for Method A and B have similar global fit indices. This means that we cannot determine which one is preferable.

- A CFA model allows to estimate the reliability of the items per method. As we do not assume a tau-equivalence model, i.e. that items factor loadings are all equal, we do not report Cronbach's alpha here but only McDonald's Omega (Table 38) which assumes a congeneric model, i.e. that the factor loadings can vary in a CFA model. The usual threshold for research purposes of these reliability indicators is .7, here we find all methods in all countries very high, ranging from .89 Method C in Bulgaria to .97 for Method A and B in Italy. From these reliability coefficients, we can neither conclude which of the three methods is preferable.

- In summary, in this section we considered correlations, descriptive statistics, conducted confirmatory factor analyses, and estimated the reliability of the factor score, none of these allows us to conclude that one method is preferable over the other. However, we can conclude that the indicators are answered differently depending on internet use, this same finding was derived from the analysis of the timing data in GB. We can also conclude that fewer items can capture the concept, as the measurement models show redundancy. We suggest revising the possibility that offline respondents skip these items, and of using a shorter number of items.

Triangulation of pre-testing evidence on the "Internet skill" experiment

- There is no strong evidence suggesting that one method[1] performs better than the other two. There is some indication that M2 performs is not capturing substantive differences. Several findings that point out to these conclusions:
- Both 'understanding' and 'familiarity' related terms are challenging for translation.
- The INR is very low in M1 and M2, and low in general in M3.
- Timestamps do not reveal different use of the items by gender, but substantive answers do in M1 and M3. According to the QDT, M2 is not capturing those differences: "It is interesting to note that in all three countries there were no statistically significant differences in responses between male and female respondents in version B." Therefore, this points out that M2 is ill-performing to capture substantive differences in comparison to the other two.
- The use of the category "good understanding" is, in general, larger than its equivalent "very familiar", although no statistical test is conducted, this is observed as a general trend. A higher choice for a specific category may explain why this method fails to show significant gender differences, therefore, it may be introducing larger effects.
- The exploratory factor analysis (EFA) and the confirmatory factor analysis (CFA) show that both M1 and M2 perform in the same way. The point estimates eigenvalues (EFA) and loadings (CFA) are different, which is expected, but they all show the same pattern.
- There is no indication in EFA or CFA that M3 performs badly, it is not comparable to the other two, but it shows that a factor can be formed and it does not show any problem.
- All methods show correlations in the same direction, point estimates are different, but that is not an indication of bad design.

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[1] Method refers to the corresponding versions. That is, method 1 refers to version A, method 2 version B, and method 3 version C.

- We revise each of the reasons the QDT mentions to select the method against the pretesting evidence, and comment on that, it seems that the rationale of the QDT is not really related to the evidence, as some statements are not related at all to the findings.
- We suggest choosing the shortened version of skill version 1 familiarity (pdf, advanced search, preference settings). The first version is chosen for the following reasons:
- The measurement has more often been used in existing research. UPF: this is not related to the pretesting evidence.
- M1 and M3 show common association with age, education, and gender. M2 is not showing this association with gender.
- It is correlated with internet use, all three groups show that onliners possess variability in the responses, whereas, for offliners, this variability is not present.
- All three methods are correlated with contact.

Interviewer comments:
- Interviewers in BG and IT felt that respondents sometimes found it difficult to recognize abbreviations and their meaning (primarily "Wiki" or "BCC"), which is especially the case for elderly respondents. Some of these older respondents in BG asked the meaning to their sons or daughters, and others sincerely acknowledged that they did not know the meaning. For example, more than 4 in 10 interviewers (41.8%) reported that respondents had issues with the term BCC at least half of the time.
- It was suggested that it would be helpful having a short description of the items in addition to the abbreviations.
- In GB, a few respondents perceived the questions as a "test", and they tried to seek a consensus or confirmation from the interviewers about their understanding of the item.

Findings from cognitive interview:
- Version A refers to as above. That is, version A – Familiarity (D2a – D7a), version B – Understanding (D2b – D7b) and version C – Like me (D8aa – D8cd).

Versions A and B: -
- The cognitive testing interviews in all countries showed that overall participants could eventually answer the questions, both versions. Those participants who had higher levels of computer literacy were able to answer with less hesitation. Overall, participants also preferred the first version, which asked them about familiarity with the two internet and computer related terms. In Germany, participants suggested that that the phrase "being familiar with something" has a connotation of "trust" and should be revised if it is not meant for it to tap at this concept. Another issue that was identified was the fact that not all participants were familiar with the English pronunciation of certain terms or phrases related to the internet or computers.
- Cognitive interviews suggest that the set of question on familiarity is best suited to assess participants' computer and internet skills. The findings also suggest that participants tend to score their familiarity slightly higher than their understanding – these results should also be checked against the pre-test data.
- It should be considered whether the term "JPEG" (and possibly other computer and Internet skills items) are shown to the participant on a showcard in order to reduce error due to unfamiliarity with the (English) pronunciation of the terms.
- Preference settings should be in plural, rather than singular form, and consideration should be given to being more specific about the device that the participants should consider when answering this question.

Version C: -

- Overall the question worked well. The issues identified were related to question C not being specific enough, which made it thus somewhat unreliable. The participants also commented on the list of response options, suggesting that it could easily be shortened.
- It should be considered whether "internet or computer-related problems" is too vague. Specifying the device or a particular problem would be beneficial in ensuring that all participants think of the same problems when answering the question.
- Condensing the list of response options should also be considered. We recommend a list that consists of three response options: 1. Like me; 2. Somewhat like me; 3. Not like me
- Given the good performance of this question, G08 should be considered a good candidate for inclusion in the rotating module.

Overall recommendations: -

- The questions discussed in this template tapped at the same concept, i.e. internet and computer skills. The aim of the cognitive testing exercise was to determine the best candidate between these three types of questions for measuring internet skills. Other things that should be considered when making a recommendation and a decision about these items is ensuring that the format chosen will be easily adaptable in the future, giving the fast turnaround in the digital sphere.
- The CST and QDT have agreed that these questions should tap more at task-based skills, rather than knowledge-based skills. Given this decision, the final choice should be between the familiarity question (Version A) and the vignette style question (G08). However, the term familiarity also has a connotation of knowledge and, particularly in some translations, it appears to be closely related in conception meaning to the "understanding" version of the question.
- Question G08 presented fewer issues that G05 and G06 version A and B – participants in cognitive interviews across the five contexts showed less signs of burden when answering this question – there was less hesitation and fewer response changes across the countries. One issue that the participants raised is the hypothetical nature of the question.
- We therefore recommend that the introduction should be expanded briefly so as to allow participants to better understand the vignette structure of the question from the beginning.
- We recommend considering condensing the response categories from six to three options.

CST recommendations:

- We accept the QDT's preference for version A ('familiar'), even though we find that the rationale provided for choosing this version is not always based on the pre-testing evidence (see 'Triangulation of pre-testing evidence' above). We note that an argument for choosing version A or B over C could be the larger variability of responses that these approaches elicit.
- On versions A and B, there is an open question for the QDT on whether the adjustments suggested by the CST have reduced the quality of the scale.
- Regardless of the version chosen, we would welcome the suggestion to shorten the scale and we consider that the 3 items pre-selected by the QDT (advanced search, PDF, preference settings) would eliminate at least some of the issues and criticism encountered during expert review and pre-testing.
- We also note the existence of an alternative and more recently validated internet skills scale which we might want to consider during the upcoming discussions

Round 10 – Items

This concept was included in the final R10 module (items G2, G3, and G4), however only D2a, D3a, and D6a were included in the final module.

1.3 WORK

1.3.1 General

Early development – General comments

Comments from 1ˢᵗ QDT meeting (24/09/2018):
- For concepts related to the work domain, the QDT planned to ask all questions about the respondent's main job.
- The CST mentioned the existing set of items about main job in Section F and noted that the items could be appended to that section.

Comments from 11ᵗʰ ESS ERIC NC Forum (20/11/2018):
- The CST noted that, at least in some countries, it is becoming more and more common for people to be self-employed, without co-workers or supervisors. The QDT responded that they have discussed this and could agree to ask about clients rather than co-workers for respondents who are self-employed with no co-workers.
- An NC asked if they have thought about studying the type of workplace (e.g. firm size, economic sector, ownership). Digital social contact can be central to the business model or can just support it, depending on the type of business. From this, it may follow that there are different ways of organizing work and consequences in terms of digital social contact. The QDT replied that workplace context indeed matters. Automation of work coordination and tracking could be two ways in which this manifests itself. Therefore, they agree that they should not take a too narrow angle.

1.3.1.1 Managerial support for work-life balance

Managerial support for work-life balance has been identified as a key dimension of work-life supportive workplace culture. We test whether the measurement of Thompson et al. 1999 on managerial support or the measurement online manager support in line with the LEEP-B3 data and several other studies is more appropriate. Existing research indicates that the direct line manager is important for the work-life balance situation of employees.

Early development – Comments

Comments from 1ˢᵗ QDT meeting (24/09/2018):
- 'Supervisor' might be misleading in British English and that 'line manager' would be more suitable.

Comments from 2ⁿᵈ QDT meeting (28/02/2019):
- Use 'line manager' in British English, however this can be annotated to denote the person directly above you.

Comments from CST subgroup meeting (29/08/2019):

- The CST would like the QDT to confirm whether they would prefer that this and similarly routed items are reformulated to refer to current or past employment and be routed from core item F21 only, or rather to keep the current tense and be routed from core item F21 and additional core items (e.g. see complex routing instructions before F21).
- The CST noted that the current full battery of items (G63/G66) frequently switches between 'line manager', 'employer' and 'organisation'. This is likely to reduce measurement quality.
- The response scale for this and other items has received criticism during the CST review. The CST will propose alternative construct-specific response scales for all items using this scale currently included in the full version of the module and discuss these with the QDT.

Pre-test – Items

[EXPERIMENT 5 – SPLIT BALLOT DESIGN: We are going to ask questions about family-friendly workplace culture using different wordings to randomly allocated subgroups within the sample. Create random split variable EXP5, which will NOT BE SHOWN to respondents. Each experimental group should include approximately 50% of respondents. This variable should be populated at the start of the interview.]

D17a

ASK IF CURRENTLY IN PAID WORK AT F17a OR F18 (IF 01 AT F17a OR F18 = 1)
STILL CARD 28

To what extent does the following statement apply to your job and workplace? **READ OUT…** In general, my line manager[2] seeks to support employees in balancing work and family commitments.

INTERVIEWER: Line manager refers to the person the respondent receives work instructions from on a regular basis; if the respondent has several line managers, ask them to think of the one they received work instructions from most recently. This applies to all questions referring to the respondent's line manager in this module.

Mixed [NotAtAllCompletely10 + NoLineManager]		
MIXED	Mixed [NotAtAllCompletely10 + NoLineManager]	
SCALE	NotAtAllCompletely10	
	Does not apply at all	0
	Applies completely	10
MISSING_GROUP	NoLineManager	
	I don't have a line manager	55
	Refusal	77
	Don't Know	88

Translation notes:

[2]'Line manager': the person from whom the respondent directly receives work instructions on a regular basis.

D17b

ASK IF EMPLOYEE AND EXP5 = 2
STILL CARD 28
To what extent does the following statement apply to your job and workplace? **READ OUT…** In general, my employer accommodates family-related needs.

Mixed [NotAtAllCompletely10 + NoLineManager]		
MIXED	Mixed [NotAtAllCompletely10 + NoLineManager]	
SCALE	NotAtAllCompletely10	
	Does not apply at all	0
	Applies completely	10
MISSING_GROUP	NoLineManager	
	I don't have a line manager	55
	Refusal	77
	Don't Know	88

Pre-test – Results and comments

Omnibus testing:
- INR levels are within acceptable parameters across all test countries for both versions (i.e. no instances of INR>=7).
- For both versions, in GB and BG responses are clustered at one end of the scale (10 'Applies completely').
- In IT, for both versions responses are skewed (to the right).
- The version of the question asked did not appear to have a large effect on response distributions.
- One important difference in question wording between the two versions is the reference to 'my line manager' (D17a) vs 'my employer' (D17b). This required including a hidden code at D17a for respondents who do not have a line manager. This code was used by 7.4% respondents in GB, 3.4% in IT and 1.5% in BG. As these items are already asked to a sub sample (see below), this might be an argument in favour of choosing a broader wording.
- When combined, these two questions were asked to less than half of respondents in IT (38.2%) and GB (49.2%), but to more than half of respondents in BG (61%) based on their employment status (only employees were routed to this question). Across the 3 countries2 , about 49% of respondents were coded as employees and therefore asked these questions.
- However, two important differences between the omnibus pre-testing questionnaire and the intended routing based on ESS core modules must be noted: (1) the identification of employees in the omnibus pre-testing was based on country-specific rather than harmonised variables; (2) ESS core item F21 collects information on current or past employment relation, while the omnibus questionnaire only focuses on the former. Therefore, the estimates above should be read with caution. This also prompts some recommendations for question wording (see Recommendations below).
- Based on ESS8 data, we would expect about 75% of respondents who are/were in paid work to be/have been employees – this corresponds to about 69% of the entire ESS8 samples (with population and post-stratification weights applied).

QDT recommendations:

- Both measurements of work-family support are associated with social cohesion in the team and relationship quality with the line manager as well as the content of contact items.
- We suggest version 1 to measure work-family support as we are especially interested in the relation with the line manager.

Interviewer feedback and comments:
- Both version of question D17 were almost fully understand by respondents. In IT, on average 65% of the interviewers mentioned they never had respondents having problems with those questions, in GB the same answer mentioned about 8 in 10 interviewers and in BG it was more than 90% of the interviewers.
- Only in BG, there were a comment that these questions were shown also when respondents were self-employed even if technically not applicable to them (as per filtering instructions on the questionnaire).

CST recommendations:
- We would like the QDT to confirm whether they would prefer that this and similarly routed items are reformulated to refer to current or past employment and be routed from core item F21 only, or rather to keep the current tense and be routed from core item F21 and additional core items (e.g. see complex routing instructions before F21).
- We note that the current full battery of items (G63/G66) frequently switches between 'line manager', 'employer' and 'organisation'. This is likely to reduce measurement quality. Does the QDT have a preference for one specific reference frame?
- The response scale for this and other items has received criticism during the CST review. We will propose alternative construct-specific response scales for all items using this scale currently included in the full version of the module and discuss these with the QDT.

Round 10 – Items
Item D17a for this concept was included in the final Round 10 module (items G44). However, item D17b was not included in the final Round 10 module.

1.3.1.2 Relationship quality

This concept aims to measure the relationship quality with the supervisor. It provides an evaluation of the relationship with the supervisor indicating whether it is very good, quite good, Neither good nor bad, quite bad, very bad.

Early development – Comments

Comments from 11th ESS ERIC NC Forum (20/11/2018):
- An NC noted that the term "supervisor" is very generic and it needs to be precisely defined in order to use it correctly. The QDT agreed with this and will use the term line-manager and provide an interviewer instruction to define line-manager.
  - o Line manager refers to the person the respondent receives work instructions from on a regular basis; if the respondent has several line managers, ask them to think of the one they received work instructions from most recently. This applies to all questions referring to the respondent's line manager in this module.

Comments from 2ⁿᵈ QDT meeting (28/02/2019):
- It was suggested to use 'line manager' in British English, and annotate this with the person directly above you.

Pre-test – Items
D18
CARD 29
In general, how would you describe your relationship with your line manager?

INTERVIEWER: Line manager refers to the person the respondent receives work instructions from on a regular basis; if the respondent has several line managers, ask them to think of the one they received work instructions from most recently. This applies to all questions referring to the respondent's line manager in this module.

Mixed [VeryLikely4 + DKREF]		
MIXED	Mixed [GoodBad5 + DKREF]	
LIST	GoodBad5	
	Very good	1
	Good	2
	Neither good nor bad	3
	Bad	4
	Very bad	5
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

Pre-test – Results and comments
Translation queries:
- Line manager is difficult to translate as such. We could use the English "manager" even in French, which would be a good substitute. (PL also asked to explain 'line manager'). The CST replied that, ideally, it should be the manager directly above the respondent in the hierarchy, the one overseeing the respondent's work. However, if such a term doesn't exist in France (perhaps also because work is organized differently – which we know is the case in some countries) manager may be fine. It was also noted that line manager refers to the person the respondent receives work instructions from on a regular basis. This can be translated as 'direct supervisor'. Be mindful that in other languages the term 'manager' might have a narrower business connotation that is not present in English.

Omnibus testing:
- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).

- In the omnibus pre-testing, this question was asked to slightly more than half of respondents in GB and IT (respectively 56.7% and 51.4%) and more than seven in ten in BG (71.3%). When considering the routing used in the full version of the module, we would expect this question to be asked to slightly more than 50% of respondents (based on ESS8 data, with population and post-stratification weights applied).
- Almost one in five respondents in IT volunteered the hidden code 'I have no line manager' (18%). This group was 14% in GB and 10% in BG.
- Across the 3 countries , about 14% of respondents reported having no line manager and would therefore not be asked the follow-up items about DSC with their line manager. In combination with the third point above, this means that follow-up items would only be asked to approximately 52% of the full sample.

CST recommendations:
- The only suggested change is to include the hidden code on the showcard (as 'I don't have a line manager').

Round 10 – Items
- This concept was <u>not</u> included in the final Round 10 module.

1.3.2 Co-worker

1.3.2.1 Social cohesion in work team

The concept social cohesion identifies the climate in the work team. We suggest to measure to what degree the respondents agree or disagree to three statements on the climate in the work team or department. This is a shortened version of the concept validated in the Sustainable Workforce Survey.

Expected relationship with other complex and simple concepts
Social cohesion in the work team is expected to be associated with frequency and content of digital social contact as well as of face-to-face contact with supervisor and co-workers of (expdscw, supftfc, cowftfc, exsolw) which indicate associational solidarity (Bengtson and Roberts 1991).

Pre-test – Items

D16
ASK IF IN PAID WORK AT C3a, C3b, C3c, C3d OR C5 (IF 01 AT C3a OR 01 AT C3b OR 01 AT C3c OR 01 AT C3d OR C5 = 1)
The next few questions are about the team in which you work.
STILL CARD 28
To what extent does the following statement apply to the team or department in which you work?

Everyone feels like part of the team or department.

Mixed [NotAtAllCompletely10 + NoTeam]	

MIXED	Mixed [NotAtAllCompletely10 + NoTeam]	
SCALE	NotAtAllCompletely10	
	Does not apply at all	0
	Applies completely	10
MISSING_GROUP	NoTeam	
	I don't work in a team or department	55
	Refusal	77
	Don't Know	88

Pre-test – Results and comments

Omnibus testing:

- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).
- Responses in GB and BG are clustered at one end of the scale (10 'Applies completely'). In IT, there is clustering at points 7 and 8.
- In the omnibus pre-testing, this question was asked to slightly more than half of respondents in GB and IT (respectively 56.7% and 51.4%) and more than seven in ten respondents in BG (71.3%). When considering the routing used in the full version of the module, we would expect this question to be asked to slightly more than 50% of respondents (based on ESS8 data, with population and post-stratification weights applied).
- 6% of respondents in IT volunteered the hidden code 'I don't work in a team or department'. This group was slightly larger in GB (8%) and BG (11%).
- Across the 3 countries, about 8.2% of respondents reported not working in a team or department and would therefore not be asked the following items about working in a team. In combination with the fifth point above, this means that these items would only be asked to approximately 52% of the full sample.

CST recommendations:

- The response scale for this and other items has received criticism during the CST review. The CST will propose alternative construct-specific response scales for all items using this scale currently included in the full version of the module and discuss these with the QDT.

Round 10 – Items

This concept was included in the final Round 10 module (item G51).

1.3.2.2 Distance

Pre-test – Items

[Included in both the pre-test omnibus and the cognitive interviews]

D19

Now let's talk about your colleagues you work with on a regular basis, regardless of whether they work for the same employer or for a different one.

CARD 30

At the current time, what proportion of your regular colleagues are based at the same workplace as you?

INTERVIEWER: If respondent asks which colleagues to consider, ask them to refer to the colleagues they work with on a regular basis. If respondent has more than one workplace, ask them to think about the workplace they work at most frequently.

Mixed [ProportionColleagues + NOCOLLEAGUES]		
MIXED	Mixed [ProportionColleagues + NOCOLLEAGUES]	
LIST	ProportionColleagues	
	All	1
	Very large	2
	Over a half	3
	About half	4
	Under a half	5
	Very small	6
	None	7
MISSING_GROUP	NOCOLLEAGUES	
	I don't have colleagues	55
	Refusal	77
	Don't Know	88

Pre-test – Results and comments

Translation queries:

- A translator commented that, in the introduction, if not working for the same employer, those people would not be called 'colleagues' in Poland. Therefore, the question is unclear. The CST replied that, in British English, 'colleague' can refer to a fellow worker or member of a staff, department, or profession. Is it possible to find a word that can cover these different uses, i.e. not specifically relating to people working for the same employer only?
- In Polish to convey the English meaning of 'colleagues', the phrase 'z pracy' (you work with, from your company) needs to be added, as otherwise, the word would be synonymous to friends and would have no connotations with work. The CST responded if it would be possible to say 'colleagues from work' rather than specifically 'from your company'. The source text covers both colleagues working for the same employer and for different employers, and they would like to retain that meaning if possible.

Omnibus testing:

- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).
- In all countries, options 'All' and 'Very large' account for more than half of all answers (IT 58.8%, BG 53.7%, GB 52.2%).
- In the omnibus pre-testing, this question was asked to slightly more than half of respondents in GB and IT (respectively 56.7% and 51.4%) and more than seven in ten in BG (71.3%). When

considering the routing used in the full version of the module, we would expect this question to be asked to slightly more than 50% of respondents (based on ESS8 data, with population and post-stratification weights applied).
- In BG, only 7% of respondents said 'I have no colleagues', while in IT is more than double (15.4%).
- Across the 3 countries, about 11% of respondents reported having no colleagues and would therefore not be asked the follow-up items about DSC with their colleagues. In combination with the fourth point above, this means that follow-up items would only be asked to approximately 48% of the full sample.

Interviewer feedback and comments:
- In all three countries, question D19 about the 'proportion of colleagues working in the same workplace' was well understood by respondents.
- In GB and IT, the interviewers only commented on the fact that the questions relating to work and colleagues appeared also if respondents are self-employed (as per scripting instructions), and in those cases the responses given by the respondents were always "not applicable".
- In BG, some respondents had difficulty defining the notion of "workplace" (it was mostly often with people, who do not have a specific working place in terms of "space", such as sales representatives, drivers, and so forth).
- It was suggested that it would be good to have a clarification of this question to give a definition of how a "workplace" is defined as a particular physical space, such as a work environment or a company

CST recommendations:
- The CST suggests to include the hidden code on the showcard (as 'I don't have colleagues').
- The CST also suggest to consider whether the expression 'people you work with' would be more suitable than 'colleagues' (however this could include e.g. clients or other people with a different kind of relationship to the respondent).

Round 10 – Items
This concept was included in the final Round 10 module (item G53).

1.4 FAMILY

1.4.1 Child

1.4.1.1 Identifier

This is question is used to identify whether the respondent has a child 12 years or older. This question is necessary as a filter because questions on digital social contact with children will only be asked to respondents with a child 12 years or older, where digital social contact is more likely to occur on a regular basis in contrast to younger ages. We now not only ask whether the respondent has a child 12 or older but also how many to be better able to control for the number of children. To realize a random pick of the child we refer to the one who had his or her birthday most recently.

Early development – Comments

Module proposal:
- More fine graded answer categories, similar to the LEEP-B3 survey, are also appropriate for digital social contact (e.g., ranging from several times a day/multiple times a day, daily, at least several times a week, at least one at week, less often and never). Questions on face-to-face and digital contact with children will be asked of parents, regardless of the age of children.

Comments from 1ˢᵗ QDT meeting (24/09/2018):
- Open questions for the QDT to discuss include (1) the cut-off age at which children are included: this could be based e.g. on the age at which children typically get their first phone, or the age at which they start secondary school; (2) the selection mechanism: random vs. the child the respondent has most digital social contact with, and also whether or not living/not living in the same household matters. This will depend on whether the QDT is interested in measuring digital social contact with children/minors or more generally offspring.
- The CST suggested to make the module as general as possible, so that it can feel relevant to respondents in all countries – e.g. including not just biological children but also step/foster children if respondent wants to consider them. Age and gender of children not living in the household would need to be measured too – as the household roster currently includes age, gender, relationship to respondent of all household members. An idea could be to include a follow-up to the household roster asking additional information about children living out of the household.

Comments from 11ᵗʰ ESS ERIC NC Forum (20/11/2018):
- The CST noted that randomly selecting one child from within the household might over-represent children living in smaller households. They asked if this could bias the results, or have an impact on some of the core variables you are interested in? The QDT responded that they aim to randomly select one child aged 12+. The selection of a child will not result in an interview with this child but in questions on the relationship of the respondent with the child. We will keep this into account and control for the number of children when analysing the data. There may indeed be differences in social contact which depend on the household size, but these would not likely be due to digital social contact.

Comments from 11ᵗʰ ESS ERIC SAB meeting (21/01/2019):
- The Sab asked why age 12 was chosen as a cut of for digital social contact. The argument with school change is not valid because this really varies between EU countries. The QDT responded that, as opposed to an older cut-off, they will have more respondents to qualify as a "parent" in the module.
- It was asked if step children would be included. The QDt responded that, as the ESS core does not include step children in their items, they will not.

Comments from 12ᵗʰ ESS ERIC NC Forum (04/04/2019):
- The CST asked if an indicator on which child is selected collected anywhere. Children coming from smaller families might have a higher chance of being selected. It would be useful to have an indicator allowing to correct for this. The QDT responded that they can control for age and gender of the child and the number of children aged 12 or above.

- An NC suggested that they explicitly mention that respondents are expected to report about children both inside and outside the household, or they might only consider the former based on the previous section.
- It was noted by an NC that this refers to grown-up children too, so 'child' may seem a bit odd in such cases. The QDT replied that they do not have the experience that it is a problem to refer to a child even if it is an adult. This is common in surveys.

Pre-test – Items

[Included in both the pre-test omnibus and the cognitive interviews]

D10

Now I would like to ask you about your family.

Can I just check, do you have any children aged 12 or over?
INTERVIEWER: Children includes any of the respondent's own children, step-children, adopted children, foster children or a partner's children.

Mixed [YesNo + DKREF]			
MIXED	Mixed [YesNo + DKREF]		
	YesNo		
	Yes	1	**ASK G11**
	No	2	**GO TO G16**
MISSING_GROUP	DKREF		
	Refusal	77	
	Don't Know	88	

Pre-test – Results and comments

Omnibus testing:
- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).
- In each of the three countries, more than half of the respondents (from 55% in IT to 61% in GB) do not have any children aged 12 or over and therefore were not asked questions from the child block.
- Across the 3 countries , about 58.5% of respondents report having no children aged 12 or over.

Interviewer feedback and comments:
- This item appears to have worked well in all three countries and could be used as currently drafted.
- It is suggested to review D10 and D11 for consistency in wording used and also to consider which children respondents should consider for inclusion and whether additional information should be conveyed to respondents about which children to include/exclude.

Cognitive interview findings:

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- Add a translation note to ensure that "had his or her birthday most recently" conveys having a birthday rather than referring to the day of birth.
- Consider that using "son or daughter" makes the introduction rather long and complicated in languages where grammatical gender is marked on multiple parts of speech, e.g. Polish. Using "child" would simplify this considerably. This recommendation should be weighed against the risk that participants with adult children may not think of their children when responding.

CST recommendations:
- We will ensure that interviewer instructions are consistent at D10 and D11 and add translation annotations for 'son or daughter' and 'birthday' as suggested. We will also refine the wording to specify that grown-up or adult children should be included, and to reduce the number of gendered words in the child selection introduction.

Round 10 – Items
This concept was included in the final Round 10 module (item G10).

1.4.1.2 Frequency of digital social contact

The ESS already includes a question on the frequency of Internet use asking "How often do you use the Internet, the world wide web, or e-mail whether at home or at work for your personal use?", with response options ranging from "No access at home or work" (0) to "Every day" (7). We suggest questions to specify Internet use and the use of mobile phones for contact with specific work and family relations, here the contact with a child. Digital social contact with the child involves communication which is transmitted by electronic and especially computerized technology and which is not in-person communication. We distinguish a) speaking to your child via landline phones, b) speaking to your child so that you can see each other on a screen, c) speaking to your child using a mobile phone, computer, tablet or other digital device excluding calls where you can see each other on a screen, d) contacting your child via text, email or messaging apps. This allows to distinguish flexibility in digital communication, synchronous communication and the richness of synchronous communication.

Expected relationship with other complex and simple concepts:
We suggest that the frequency of face-to-face contact with the identified child (chftfc) as well as co-residence (chinhh) and distance between the parent and the child (chdis) are important predictors of the frequency of digital social contact with the child because they define the need for digital social contact. Also the age of the child is likely to be of importance because it indicates the need for specific care, advice or monitoring. Internet access (internac) and Internet skill (intsk) further define the opportunity for digital social contact with the child and privacy concerns (privcon) the trust in the use of digital communication devices and thus also the frequency of digital social contact with the child. We further suggest that the frequency of digital social contacts with the child are associated with relationship quality with the child (chrelqu) and the experiences with digital social contacts with family members (expdscf).

Early development – Comments

Comments from 1st QDT meeting (24/09/2018):
D11: -

- Attention will need to be given to choosing suitable frequencies for the response categories.
- The CST suggested that digital social contact in larger groups should be excluded and only 1-on-1 interactions where a response is expected should be considered, making wordings unambiguous (e.g. 'message you directly and expect that you will respond'). This could be tested via cognitive interviews.
- It was discussed whether to include questions regarding specific types of devices, however this may be too specific. It may be a good idea to pre-test their prevalence.
- The CST also asked whether how people feel about the frequency of digital social contact should be asked. The QDT now provides questions on specific types of devices and the type of contact (e.g. talking on a smartphone, sending a text message, video-chatting) which could be pretested. The QDT agrees that digital social contact in 1-on1-interactions should only be considered. We further like the idea to ask about the peoples feeling about the frequency of digital social contact. A specific item still needs to be formulated.
- The listed questions address: device (landline, smartphone, computer, tablet), device features (mobile / tethered to location) , the software/platform/apps (social media, messaging app), and the communication type (audio, visual, written)? Being mobile as a device feature is for us of special interest. The communication type is timeless and also of interest for us. We think that it could be an option to condense the listed questions in a way that these central dimensions are measured: a) mobility in contact b) type of communicating: textual, audio, video.

Comments from 11th ESS ERIC NC Forum (20/11/2018):
- For D11, an NC noted that they expect some translation problems of several English words ("text", "video-call", etc ...). The use of anglicisms may be common among young people but are probably not very used by older people. There may not yet be an equivalent in some countries for all these terms. (also applies to other related sub concepts on frequency of digital social contact).

Comments from 11th ESS ERIC SAB meeting (21/01/2019):
- The SAB noted that with modes of digital social contact (audio, textual, visual), 'mode' might be the wrong word. Additionally, texting might only refer to texting via messaging apps, and it should be ensured that it also includes emails; alternative wording suggested was 'sending'. The QDT replied that 'sending' might be better than 'texting'. They also provided a definition on 'mode', which is a way or manner in which something occurs or is experienced, expressed, or done. This definition makes mode sound like the right word, especially since more specialized tech terms may be unfamiliar.
- An SAB member enquired about social media and whether this should be captured. The terminology sharing might help; maybe texting is in general the wrong terminology. The QDT replied that maybe they should use the term 'sending' and then differentiate what is sent between text, image, video. They should also decide on what can be combined, e.g. text and image; video could be 'richer' than the other forms of content.

Comments from 2nd QDT meeting (28/02/2019):
- For D11, on frequency of digital social contact, it was agreed to include other types of media ('send messages, emails, photos or videos to this child using a mobile phone, computer or other digital device'). The CST advised that the verb 'share' might imply a larger audience and that 'documents' might suggest a different kind of communication than other media types. It was discussed again whether communication should be 1-on-1 or include larger groups: QDT suggested to include both, but CST felt that making this explicit would make the question

excessively burdensome, and that respondents would include both contexts in their reporting if they consider that groups allow direct communication. If necessary to improve measurement, it was discussed to include the word 'directly'. Finally, including social media was ruled out as it would create additional measurement issues.

- For D12, 'How often do you send him/her written or spoken messages, photos or videos using a mobile phone, computer or other digital device?' has too many things in one question. There was a suggestion to change to 'text, email or messaging apps'. But this can be investigated in cognitive interviews– try asking the whole original question including spoken messages, photos or videos.

Comments from 12th ESS ERIC NC Forum (04/04/2019):

D11: -

- An NC said that 'how often speak when in the same place' is an odd question – does it mean the same room or same house/area. The QDT replied that they used this terminology to clarify that it is in the same room so really in person or face-to-face.
- An NC noted that when you are together with someone, are they not likely to speak to them all the time. The QDT agreed and noted that this would be captured with face-to-face contact.
- An NC suggested that an introduction should be placed before these items along the lines of: 'I am now going to ask you about how often you speak with him/her, first when you can see each other on the screen and then when you can't see each other on a screen'. However the QDT replied that this would take too much time.

D12: -

- An NC asked how people understand 'contact'. The QDT responded that they have updated this to only use 'communication'.
- An NC noted that the question does not need changing, but it should be considered how the responses are described. Such as whether they are synchronous or asynchronous (text, email or messaging are assumed to be all asynchronous). However, these may have different 'richness'. The QDT thought about differentiating by content type, but ultimately decided it was too detailed. They do not think that combining these will be a problem.

Pre-test – Items

[Included in both the pre-test omnibus and the cognitive interviews]

D11

ASK IF YES AT D10 (IF D10 = 1)

Now please think of your son or daughter aged 12 or over who had his or her birthday most recently.

INTERVIEWER: Son or daughter includes respondent's own children, as well as foster, step- and adopted children. If respondent has more than one son or daughter with the same birthday, ask for the son or daughter whose name comes first alphabetically.

CARD 27

How often do you speak with him/her/them such that you can see each other on a screen?

Mixed [FrequencySeveralNever7 + DKREF]		
MIXED	Mixed [FrequencySeveralNever7 + DKREF]	
LIST	FrequencySeveralNever7	
	Multiple times a day	1

	Daily	2
	At least several times a week	3
	At least once a week	4
	At least once a month	5
	Less often	6
	Never	7
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

D12

STILL CARD 27

How often do you contact him/her/them via text[3], email or messaging apps?

Mixed [FrequencySeveralNever7 + DKREF]		
MIXED	Mixed [FrequencySeveralNever7 + DKREF]	
LIST	FrequencySeveralNever7	
	Multiple times a day	1
	Daily	2
	At least several times a week	3
	At least once a week	4
	At least once a month	5
	Less often	6
	Never	7
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

Translation notes:
[3] 'Text' means SMS.

Comments received from pre-testing analyses (30/08/2019):

Translation queries:
- For these questions, the NC teams noted that the first two categories in the response scale ('multiple times a day' and 'daily') are not mutually exclusive.
- The answer scale is very problematic. (1) In general, most categories are not mutually exclusive! (2) 'daily' – can be 1 or several times per day, so overlaps with 'multiple times a day', (3) Delete 'at least' in all cases as these are not needed! Suggestion: Several times per

day, Once per day, Several times per week, but less than every day, Once per week, Once per month, Less often.

Omnibus testing:

D11: -
- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).
- In all three countries, there is clustering at one end of the scale ('Never'). This can be seen in Figures 1 to 3 below.
- A much larger share of respondents chose 'Never' in IT (68%) compared to GB (46%) and BG (42%).

D12: -
- BG reports clustering at one end of the scale ('Never'). In GB, there is a high level of clustering at 2 'Daily', 3 'At least several times a week' and 7 'Never' (see Figure 4 below). IT responses are clustered at both ends of the scale (1 'Multiple times a day' and 7 'Never').
- Differences between gender groups were found in all three countries. Specifically in GB, female respondents selected 2 ('Daily') more often than male respondents, while male respondents selected 4 ('At least once a week') more often than female respondents. In BG, option 7 'Never' was selected 44% by male respondents and only by 30% of female respondents. In IT, the biggest difference was in option 1 'Multiple times a day', which was selected by 35% of female respondents and only by 23% of male respondents.
- There were also statistically significant differences between age groups and levels of educational attainment in BG and IT, and between age groups in GB. But it should be emphasized that the distribution in categories is significantly unequal in size.

Interviewer feedback and comments:
- The introduction and interviewer note at D11 is not directly in line with the information conveyed at D10. At D10, the interviewers are told that 'a partner's children' should be included but at D11 this has been omitted. Measurement error could be generated if there are differences in which child respondents are thinking about.
- In all countries, most respondents did not have problems understanding the introduction to the section on online and mobile communication before question D11 (this section asked them to 'think of their son or daughter aged 12 or over who had his or her birthday most recently').
- However in IT, some respondents were not sure if they had to consider only their son or daughter living with them (in the same house) or elsewhere or if there was a maximum age limit for the son or daughter in order to be included in the question.
- In GB, in the debrief call one interviewer mentioned that only one person had difficulties in identifying the child with the most recent birthday. o It is suggested to review D10 and D11 for consistency in wording used and also to consider which children respondents should consider for inclusion and whether additional information should be conveyed to respondents about which children to include/exclude.
- For D11, it was noted that the question formulation using 'him/her/them' is awkward and in line with good practice for ease of scripting and administering they suggest we suggest inserting a child's name into the introductions and question wording (the child's name could be collected prior to D11)

Findings from cognitive interview:
- The list of response options could be condensed.

CST recommendations:
- The CST would welcome the simplified response scale suggested in the CI report as an improvement over the current version.
- The CST would also like to discuss with the QDT further changes to this set of items, not all of which were included in the omnibus pre-testing: We would suggest to combine D11 with the item on audio calls, given that the former reports similar clustering across all 3 countries. The resulting item would therefore cover both audio and video calls.

Round 10 – Items
This concept was included in the final Round 10 module (item G17 and G19).

1.4.1.3 Solidarity

Solidarity addresses intergenerational appreciation and support as part of digital social contact with parents and children. Hertlein (2012) defines approximation as an ecological influence of the use of the internet and mobile phones which have features which allow to approximate face-to-face situations and thus also the exchange of solidarity. Also, other studies suggest that digital social contacts can be a source for the exchange of solidarity (e.g., see review of Dworkin et al. 2018).

Early development – Comments
Module proposal:
- Solidarity is measured with statements on support and appreciation from family members and at work, e.g. "The Internet and mobile phones facilitate receiving support and appreciation from family members". These statements are newly formulated for the ESS Rotating Module but rely on a large field of research asking about support in work or family life, more often with a focus on a specific relationship (Abendroth & Den Dulk 2011; Cohen & Wills 1985; de Lange et al. 2003; Gilbreath & Benson 2004). Also, in the European Social Survey 2012, the rotating module on personal and social wellbeing included general measures on solidarity (D36 and D29), e.g. "To what extent do you feel appreciated by the people you are close to?" Experiences of monitoring in the work and family domain have been neglected in surveys but their potential has only increased due to new technological developments.

Comments from 1st QDT meeting (24/09/2018):
- The QDT explained that 'solidarity' stands for support, appreciation (recognition) and advice, though the QDT might need to further specify the term (e.g. as 'support and advice'). Negative dimensions (e.g. criticism) might also need to be mentioned.

Comments from 11th ESS ERIC SAB meeting (21/01/2019):
- An SAB member asked if solidarity is the right term and do they measure it in the right way. Closeness is not solidarity; that is, it refers to the content of digital social contact, so maybe change item for children in line with item to supervisor, that it includes help and advice. However, we also want to have it as closeness because it solves the problem of reversed causality with relationship quality, which is also about closeness. The QDT replied that it is important that they remember that sociologists are probably the only people who know what solidarity and cohesion mean.

Comments from 2nd QDT meeting (28/02/2019):

- On the solidarity sub concept, it was agreed to use the wording from the work item for the family block too, as 'help and advice' and 'closeness' are not necessarily the same, plus relationship quality is already evaluated in another item.

Comments from 12th ESS ERIC NC Forum (04/04/2019):

- An NC asked whether 'give advice' meant give advice specifically about technology or in whether it is meant in general. The QDT replied that this is meant in general, and due to the ordering of the questions, technology is not triggered in that section but general solidarity.

Pre-test – Items

D13

The next few questions are about your experiences using online and mobile communication for keeping in touch with this child. Online and mobile communication refers to communication taking place over the Internet or mobile networks, using mobile phones, computers, tablets or other digital devices.
CARD 28
To what extent does each of the following experiences apply to the online and mobile communication between you and this child? **READ OUT**…it makes it easier for me and my child to give help or advice to one another when needed.

Mixed [NotAtAllCompletely10 + DKREF]		
MIXED	Mixed [NotAtAllCompletely10 + DKREF]	
SCALE	NotAtAllCompletely10	
	Does not apply at all	0
	Applies completely	10
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

Pre-test – Results and comments

Omnibus testing:

- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).
- All countries report clustering at one end of the scale. IT reports clustering at 0 'Does not apply at all', while GB and BG at 10 'Applies completely'.
- 7% to 9% of respondents in each country volunteered that they have 'no online and mobile communication with this child'. This was included as a hidden code for the omnibus pre-testing, but these respondents will not be asked these questions based on a previous filter question when fielding the full module.
- In GB, differences between gender groups were found for D13. Specifically, option 10 'Applies completely' was selected by 40% of female respondents and only by 30% of male respondents.

CST recommendations:
- We wonder whether there could be room for additional cuts under this concept, given that response patterns appear similar for D13-D15. We also wonder whether these dimensions are indeed the ones composing this concept.
- We suggest to remove the implicit comparison criticised during the expert review by amending D13 and D15 ('make it easy'). We would not recommend to reformulate the current items by alternating positive and negative wordings as suggested by the QDT, but we would rather place the 'disturbance' item in the middle of the battery.

Round 10 – Items

This concept was <u>not</u> included in the final Round 10 module.

1.4.1.4 Coordination

Coordination addresses the use of digital social contact to better coordinate intergenerational activities. Wajcman et al. (2008) for example show for Australia that mobile phones are an important source for coordination between family members.

Early development – Comments

Comments from 11th ESS ERIC NC Forum (20/11/2018):
- An NC noted that Intra-generational coordination between partners is similarly important (Rainie & Wellman, 2011). They QDT agreed with this, but noted that, as with friends, space limits do not allow us to consider partners. In addition, partners, being co- resident, have more opportunities for face-to-face contact and thus less need of digital social contact.

Pre-test – Items

D14
CARD 28
To what extent does each of the following experiences apply to the online and mobile communication between you and this child? **READ OUT**… it helps me coordinate activities with my child.

Mixed [NotAtAllCompletely10 + DKREF]		
MIXED	Mixed [NotAtAllCompletely10 + DKREF]	
SCALE	NotAtAllCompletely10	
	Does not apply at all	0
	Applies completely	10
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

Pre-test – Results and comments

Omnibus testing:
- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).
- All countries report clustering at one end of the scale. IT reports clustering at 0 'Does not apply at all', while GB and BG at 10 'Applies completely'.
- 7% to 9% of respondents in each country volunteered that they have 'no online and mobile communication with this child'. This was included as a hidden code for the omnibus pre-testing, but these respondents will not be asked these questions based on a previous filter question when fielding the full module.

CST recommendations:
- We wonder whether there could be room for additional cuts under this concept, given that response patterns appear similar for D13-D15. We also wonder whether these dimensions are indeed the ones composing this concept.

Round 10 – Items

This concept was <u>not</u> included in the final Round 10 module.

1.4.1.5 Monitoring

Monitoring addresses the feeling of being controlled digitally by frequent digital contact between parents and children. The feeling of being monitored has been addressed for parent-child interactions (for review see Dworkin et al. 2018).

Early development – Comments

Module proposal:
- The statements "The Internet and mobile phones allow my family to monitor where I am and what I am doing" and "The Internet and mobile phones allow my supervisor and colleagues to monitor when, where and how I do my work" are used. The Georgia Institute of Technology asks about monitoring as a privacy concern (1998). Questions on monitoring at work have been part of the LEEP-B3 survey referring to digital tracking and the use of process data.

Comments from 11th ESS ERIC SAB meeting (21/01/2019):
- An Sab member asked if people are concerned about being monitored. Parents may be asked whether they restrict access to certain content, and restrict time spent on computers. Youth aged 15-17 may be asked whether they provide their credentials to parents, agreed with access limitations to certain pages or agreed with time restrictions on PC.
- The QDT replied that monitoring in the family domain especially in parent-child relationships is a major topic in existing research. The suggestions are very interesting contents for further questions. Unfortunately, due to space limitations they were not able to also consider them. They are also not directly related to digital contact, which is the main topic of the module.

Pre-test – Items

D15

CARD 28

To what extent does each of the following experiences apply to the online and mobile communication between you and this child? **READ OUT**… it makes it easier for me and my child to know what each other are doing.

Mixed [NotAtAllCompletely10 + DKREF]		
MIXED	Mixed [NotAtAllCompletely10 + DKREF]	
SCALE	NotAtAllCompletely10	
	Does not apply at all	0
	Applies completely	10
MISSING_GROUP	DKREF	
	Refusal	77
	Don't Know	88

Pre-test – Results and comments

Translation queries:

- The wording at D15 ('to know what each other are doing') prompted some discussions for the IT translation. The final Italian wording back translates to 'what the other is doing', implicitly taking on board the reciprocity which is explicit in the source wording.

Omnibus testing:

- Differences between gender groups were also found in BG for item D15. Again, option 10 'Applies completely' was chosen much more often by female respondents (48%) than by male respondents (35%).
- In IT, differences between gender groups were found for all three questions, however these were smaller differences at different scale points rather than larger differences at one specific scale point.

CST recommendations:

- We wonder whether there could be room for additional cuts under this concept, given that response patterns appear similar for D13-D15. We also wonder whether these dimensions are indeed the ones composing this concept. We suggest to remove the implicit comparison criticised during the expert review by amending D13 and D15 ('make it easy'). We would not recommend reformulating the current items by alternating positive and negative wordings as suggested by the QDT, but we would rather place the 'disturbance' item in the middle of the battery.

Round 10 – Items

- This concept was not included in the final Round 10 module.

1.4.2 Parent

1.4.2.1 Identifier

This question is aimed to identify the parent for the following questions on the contact and relationship with this parent. It is asked whether either of your parents is still alive. Answer categories refer to all possible answers: both parents alive, only one parent alive, neither parent alive. If both parents are alive the respondent receives the instruction to think about the parent who had the birthday most recently. The interviewer instruction further clarifies "respondent has more than one parent with the same birthday, ask for the parent whose name comes first alphabetically".

Early development – Comments

Comments from 1st QDT meeting (24/09/2018):
- The CST queried whether the module is expected to be fielded before or after the household roster and mentioned each option could have advantages and disadvantages, e.g. due to the need to repeat similar questions. For families not living in the same household, it may be necessary to use a purposely designed roster. Alternatively, questions such as 'Are your parents still alive?' and 'How many children do you have?' would need to be added.

Comments from 12th ESS ERIC NC Forum (04/04/2019):
- An NC suggested that, for parents, there may be biases given the demographics (in couples, men are usually older and women have more longevity) to be taken into account in the analysis. The QDT replied that it is not the year of birth but the date of the last birthday, for example November and January.

Pre-test – Items

D9
Now I would like to ask you about your family.
Are any of your parents still alive? If YES: Probe whether one or more than one.
INTERVIEWER: Parents includes any legal guardian, such as foster, step and adoptive parents.

Mixed [YesNoParents4+ DKREF]		
MIXED	Mixed [YesNoParents4 + DKREF]	
LIST	YesNoParents4	
	Yes, both parents	1
	Yes, only one parent	2
	No, no parent	3
MISSING_GROUP	DKREF	
	Refusal	7
	Don't Know	8

Pre-test – Results and comments

Omnibus testing:
- INR levels are within acceptable parameters across all test countries (i.e. no instances of INR>=7).
- In IT, almost two respondents in five (38.5%) said they had no parent alive, while in BG and GB this group was smaller (respectively 26.2% and 33.6%). These respondents will not be asked questions from the parent block.
- Across the 3 countries, about 33% of respondents reported having no parent alive.

Interviewer feedback and comments:
- This question is quite sensitive in Bulgarian culture because there it is not very acceptable to speak about dead people, especially close relatives. Bulgarians avoid asking such a question in order not hurt the other person, so also the interviewers in this case felt uncomfortable when asking the question and have 'excused themselves' to the respondent before posing the question. It is suggested that this question could be included in the self-completion module (if this in retained) to overcome concerns around sensitivity.

CST recommendations:
- We are inclined to accept the suggestion to include this item in a self-completion component as the topic is likely to be sensitive in several countries. As this entails moving the item away from the rest of the module, we will propose some wording adjustments to ensure that a good flow is retained. These will affect items G31 to G33 of the current full version of the module, including the parent selection mechanism. We will also investigate the possibility of pre-coding 'mother/father' (or 'she/he') as relevant to make the wording easier to administer for interviewers. This also applies to the child block.

Round 10 – Items

This concept was included in the final Round 10 module (item G22).