Cognitive Economics Study:
CogEcon 2013 Documentation

Version 1.0

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Preface

This documentation provides detailed information about data from the Cognitive Economics (CogEcon) 2013 Survey. Part I provides a brief description of the CogEcon Study and the CogEcon 2013 Survey development and methodology. Part II includes a detailed description of data collected and processed from CogEcon 2013.

Documentation about the CogEcon Study and its past waves (2008, 2009, 2011) is available at cogecon.isr.umich.edu/survey/. Data from CogEcon can also be merged with rich cognitive and demographic data from CogUSA.

CogEcon and CogUSA data must be obtained separately. There are additional details about merging these datasets in Section I.A.4. of the Data Description. For more information on the CogUSA study, please visit the website of the Unified Studies of Cognition (USC) at http://cogusc.usc.edu/

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I. Development and methodology

A. Background

The Cognitive Economics Study (CogEcon) was designed by a team of economists to increase understanding of the cognitive bases of economic decision-making. This effort was led by Robert J. Willis of the University of Michigan-Ann Arbor, and made possible by a partnership with the Cognition and Aging in the USA Study (CogUSA). CogUSA investigators shared both the sample and their data.

The Health and Retirement Study[1] (HRS) was designed to provide academic researchers, policy analysts and program managers with reliable, current data on the economic and physical well-being of men and women 50 years of age and older in America. Co-investigators with the HRS, Robert J. Willis and Willard L. Rodgers, partnered with John J. McArdle of the University of Southern California (P.I. of the National Growth and Change Studies, NGCS[2]), to launch a new study called Cognition and Aging in the USA.

The CogEcon study was developed and launched as part of the Data Innovation Core of Robert J. Willis's program project (NIA P01 AG026571). The program project was renewed in 2010, with funding for two more waves of the CogEcon study—CogEcon 2011 and CogEcon 2013.

B. Sample size

The CogEcon 2013 sample included everyone who was invited to complete CogEcon 2011 and still eligible to participate in 2013.[3] In total, 863 invitation letters were mailed. After fielding CogEcon 2013, SRO learned that 13 invitees were deceased and 5 had permanent conditions that made them unable to participate in the survey. In total, 845 individuals were invited and eligible to complete CogEcon 2013.

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[1] The HRS is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan.

[2] US National Growth and Change Studies (NGCS) refers to the program of research started at the University of Denver in 1978 by Jack McArdle and John Horn, and now located in the CogUSC Laboratory at the University of Southern California in Los Angeles. The main goal of these studies is to use all available collections of psychological tests to better describe and understand the many changes that occur in people over their adult lifespan (ages 18-95). To date, CogUSC research has been funded by the National Institute on Aging (NIA) and has probed deepest into the age-related growth and declines of adult intellectual functioning.

[3] Respondents were considered ineligible to participate in CogEcon 2013 if they were deceased or terminally ill, cognitively or physically unable to complete a survey, no longer participating in CogUSA study, or had withdrawn from the CogEcon study.

C. Mode, timing and reminders

The survey was fielded in October 2013 using both a mail and web version of the questionnaire. All participants who were invited to take the web version of CogEcon 2011 were invited to take the web version of CogEcon 2013. In total, 627 (72.65%) were invited to take the web survey. The remaining 236 (27.35%) respondents were invited to take the mail survey.

Invitation letters were mailed on October 2, 2013. All potential respondents received a $30 check with their invitation to complete the survey. Mail invitees were provided with a paper questionnaire and web invitees were given instructions to log in to the Internet version of the survey. An email reminder with a link to the survey was sent to web invitees two days later.

All invitees received up to four mailed reminders, and web invitees received two additional reminders via email. First reminders were sent after two weeks to invitees who had not yet submitted a survey, and the subsequent letters followed every two weeks. The fourth reminder letter invited those who had yet to respond to "switch modes."

D. Response rates

Of the 863 participants invited to take CogEcon 2013, thirteen of the 863 invitees were deceased; five respondents had a terminal illness or were otherwise physically or cognitively unable to complete the survey (according to an informant); seven respondents could not be reached.

Of the remaining invitees, 708 returned a mail survey or submitted at least some responses to the web survey. We consider all returned mail surveys to be complete and web surveys to be complete if the respondent reached the final display and submitted the survey. This corresponds to an American Association for Public Opinion Research (AAPOR) Response Rate 1, or minimum response rate, of 80.2% and Response Rate 2 of 82.0%.

The variable *c4_modesubmit* gives the respondent's submission mode. The 708 submissions included:

- 497 (70%) internet surveys (of which16 were partially complete);
- 211 (30%) paper-and-pencil (mail) questionnaires, some of which were originally invited to the web survey.

Both the median mail respondent and the median internet respondent reported spending 60 minutes completing the survey. The means were 72 minutes and 61 minutes, respectively. A timing variable embedded in the online survey closely corroborated these responses, with a median time of 53 minutes.

Invitation Mode	Submission Mode/Status			
	Web	Mail	No response	Total
Web	497 (79.3%)	25 (4.0%)	105 (16.7%)	627 (100%)
Mail	0 (0%)	186 (78.8%)	50(21.2%)	236 (100%)
Total	497 (57.6%)	211 (24.4%)	155 (18.0%)	863 (100%)

E. Survey development

The CogEcon 2013 questionnaire was developed in the spring and summer of 2013. Many questions from prior waves of CogEcon were re-asked to enable panel analyses. The questionnaire also included new questions aimed at measuring internet usage and healthcare decisionmaking. Some were drafted from scratch while others were previously fielded on the HRS.

II. Data Description

A. Introduction

The data were collected as part of the 2013 wave of the Cognitive Economics Study and have been processed and stored on a secure server maintained by the Institute of Social Research at the University of Michigan.

Additional documentation, including copies of the mail questionnaire, is available on the CogEcon website (http://cogecon.isr.umich.edu).

1. Conditions of use

The CogEcon 2013 public data files contain no individual identifiers, links to individual identifiers, or secondary information that could be used to identify respondents. By removing these variables, the data are effectively anonymized; as a result, secondary data analysis may qualify for "exempt" IRB status.

By accessing the data, you agree to the conditions of use governing access to the

Cognitive Economics public release data. You must agree to:

- not attempt to identify respondents;
- not transfer data to third parties except as specified;
- not share your username and password;
- provide information about publications based on CogEcon data via e-mail to cogeconproject@umich.edu;
- report apparent errors in the CogEcon data or documentation files via e-mail to cogeconproject@umich.edu

For more information concerning privacy issues and conditions of use, please read

"Conditions of Use for Public Data Files" and "Privacy and Security Notice" at the

Public File Download Area of the HRS web site (URL below).

2. Obtaining the data

CogEcon public data files are available free of charge to registered users. To access the data:

1. Go to the Public File Download Area of the HRS web site, at the URL: http://hrsonline.isr.umich.edu/index.php?p=reg
2. Register with HRS (if you have not already). You will receive a password within 24 hours.
3. Log in to the HRS data file distribution system.
4. Once you have logged in, follow the "Datasets and Files" link, then the "CogEcon Contributed Files" link.

We encourage researchers to use the data files in conjunction with the CogUSA data (see next page for more info). A few variables associated with the CogEcon survey are described in the data description but are not included in the public data files. We are open to requests for such variables and will consider their release on a case-by-case basis.

3. Structure of data files

Data from a paper questionnaire are available if the questionnaire was returned to us. Data from a web survey are available if the respondent accepted the informed consent statement at the start of the survey and answered at least one question.

Variables in the data file are grouped into four broad categories:

- IDs & demographics (from CogUSA)

- Sample/system variables

- Constructed variables

- CogEcon 2013 survey content

Variables are described in this document in the same order they appear in the dataset.

4. Merging CogEcon 2013 data with previous waves

Researchers with access to both the CogEcon public data and CogUSA public data can merge the files using the unique identifier, *sampid*.

For information about CogUSA, please go to the following website: http://cogusc.usc.edu

E-mail the Project Manager, Kelly Peters, at peters@usc.edu to request access to view CogUSA data and programs.

Please note that the CogEcon sample is a subset of the CogUSA sample. Each individual-level observation from CogEcon should be matched to exactly one individual-level observation in the CogUSA file.

5. Publications based on data

Please send a copy of any publications you produce based on CogEcon data, with a bibliographic reference, if appropriate, by email to cogeconproject@umich.edu with "Attn: Papers and Publications" in the subject line.

Include the following citation in any research reports, papers, or publications based on Public Release data:

- In text:

"The Cognitive Economic Study (CogEcon) is sponsored by the National Institute on Aging (grant number NIA P01 AG026571) and is conducted by the University of Michigan."

- In references:

"Cognitive Economics Study, ([insert Product Name]) public use dataset. Produced and distributed by the University of Michigan with funding from the National Institute on Aging (grant number NIA P01 AG026571), Ann Arbor, MI, (year)."

Include the following citation in any research reports, papers, or publications based on Public Release data file tagged as "Early" or "Preliminary":

"This analysis uses Early Release data from the Cognitive Economics Study, ([insert Product Name]), sponsored by the National Institute on Aging (grant number NIA P01 AG026571) and conducted by the University of Michigan. These data have not been fully cleaned and may contain errors that will be corrected in the Final Public Release version of the dataset."

6. If you need to know more

This document serves as an overview of survey development and data collection for CogEcon 2013. Additional documentation about CogEcon 2008, CogEcon 2009 and CogEcon 2011 are available on our website at http://cogecon.isr.umich.edu/survey.html.

If you have questions or concerns about the survey, public data files or the documentation, please send an e-mail to cogeconproject@umich.edu.

B. Summary of data content

1. Variable naming conventions

Most variables from CogEcon 2013 have the prefix c4_ to indicate that they are from the fourth wave of the study.

Variables from specific questions are identified first by the wave of the survey and then by their numbers on the mail questionnaire. When multiple variables are associated with the same question, suffixes distinguish between them.

Variable names have the general form:

> c4_S#_suffix

With:

- S = letter of the section
- # = question number in mail questionnaire; and,
- suffix is defined according to the conventions in the following table.

Suffix	Meaning
_yn	Yes/no part of questions that ask yes or no and then the value only for "yes" responses.
_exct	Exact response, for questions with a value and range option.
_rng	Range response, for questions with a value and range option.
_val	Combined exact value and ranges. Exact value, when available. Otherwise, the selected range.
_val_flag	Flag about the _val value—whether exact value, range, implied zero, missing, etc.
_mail, _web	Mail version (only for mail respondents), web version (only for web respondents)

Example: Question D15 asks:

"Do you (or your spouse/partner) hold any tax-advantaged retirement accounts, such as IRAs (both classic/traditional and Roth IRAs), 401(k) or 403(b) plan accounts, or Keogh accounts? *If so, what is the current balance/total value of these accounts? (Or range letter if you are unsure)*"

In this case, the yes/no response variable has the suffix "_yn." The variable name is *c4_D15_yn.* The value response variable has the suffix "_val." The variable name is therefore *c4_D15_val.* Please read Section E for more information about how we imputed values from "range cards" responses.

2. Missing data and "don't know" responses

Each variable with the suffix *_val* has a flag variable associated with it, *c4_S#_val_flag*, which contains categories for missing values as well as an indication of whether a respondent gave an exact or range value response. These sets of variables are available for questions about income, food consumption, financial and non-financial assets, and debts. The table below describes the flags in more detail.

c4_S#_val_flag		
Label		**Description**
ExactVal	1	Respondent reported an exact value for the amount.
Range	2	Respondent reported a range for the amount. For internet surveys, this implies that the respondent skipped the question asking for the exact value.
Missing	3	The respondent should have provided a value or range, but did not do so.
ImpliedZero	5	Respondent answered a question implying that the value is zero. This is either the Y/N part of the question, from a

		prior question, or because of relationship status precludes them from answering (e.g. *c4_C36_val* about spouse/partner's earnings)
RespDontKnow	6	Respondent said he does not know the value.
RespSkip	9	We do not know whether the respondent has a value for this item because he/she skipped questions needed to know this.

Additional notes:

- For questions without a Yes/No component—about household income (*c4_C2*), food at home (*c4_E17*), and food away from home (*c4_E18*)—skipped responses are counted as missing rather than implied zero.
- *ImpliedZero*: For example, single respondents do not answer the question about spouse's/partner's employment, and people who indicated that they do not hold retirement savings accounts skip past questions about assets within those accounts. Note that a respondent who does not have an asset but then writes "$0" for the amount will be flagged, here, as an ImpliedZero even though in the data she also has a value.

3. Mode differences

Most questions on the mail and web instruments are identical, but there are some differences that we have detailed below.

3.1 Web-Only Questions:

Some questions were only asked on the web version. Questions at the end of section A specifically asked about web use and were not asked on the mail questionnaire. Some questions in Section H focused on whether respondents would be comfortable providing online account information. The newly added slider questions used a format only available on the web form. Finally, miscellaneous follow-up questions used web fill logic not available on the mail questionnaire. Detailed information about the comparability between the web and mail version can be found in Section D of this documentation.

3.2 Instructions and pre-filled information:

Wording differed slightly in the instructions and "fills"—i.e., the Internet version automatically fills "spouse" or "partner" where relevant, whereas the mail questionnaire has "spouse/partner."

In the web questionnaire, we were able to preload relationship status and age. We asked for confirmation/updates of this information before Section D. In the mail version, the relationship update is asked in question D1. In the mail version, questions F9 and F12 are asked because age cannot be carried through automatically in mail surveys.

Married respondents, and those who reported that they were both (a) in a "marriage-like" relationship and (b) "planning a financial future together," were asked to include the assets and debts of their spouses/partners in questions about their finances. Singles, and respondents in "marriage-like relationships," but who were *not* planning a financial future with their significant others, were asked only about their own assets and debts.

The wording of the questions on the mail questionnaire provided reminders of these instructions, whereas the correct wording was "piped" into the web instrument.

3.3 Exact values vs. range of values

For questions about income, assets and debts, the web instrument first asked for an exact value. If the respondent clicked "next" without responding with an exact value, the instrument then asked the respondent to either return to the previous page or choose from a list of ranges below that message.

In contrast, for most income, asset or debt questions, mail respondents were given the option of providing an exact value or choosing from a list of ranges on the same page. While not perfectly comparable between modes, the only reasonable way to offer a range card option on the mail survey was to provide both on the same page.

Based on analysis of past waves, we decided to limit this option to certain questions on the mail survey because providing a range card option slightly reduces missing values, but significantly increases the likelihood of a (less exact) range response over an exact value. On the mail questionnaire, the cases in which we did **not** provide a range option include C5, C8, C11, C14, C16, C19, C21, C24, D9, D28, D31, E3, E4, E7, E8, E11, E13, E17, E18, E19, E20, and F10.

Because of additional measurement error that could be introduced in questions offering both a range and a value, anything with the suffix *_val* should be used with this difference in mind.

Most questions that offered a range card included "Cannot provide a range" as an option only in the web version. On the mail survey, only questions D15, D15a-e, D16, D16a-e, D19-D22, D24, D25 included "Cannot provide a range" as an option.

3.4 Reminder screens in web mode

In general, the mail questionnaire doesn't offer reminders, offers fewer opportunities to answer with ranges, and all questions that do offer ranges clearly display these on the same page as we ask for values. Also, on the web we offer "don't know" as an answer on most reminder screens, while this option is rarely given to mail respondents.

On the web, for most questions that were not asking for values of income, assets or debt, those who skipped a question would simply see the original screen again, plus a red reminder text asking the respondent to answer the question, if willing.[4] Additionally, as with the original survey, "don't know" was offered as an answer choice for multiple choice questions, but offered only the second time a respondent saw a question.

> Questions offering "don't know" on reminder screen as alternative to not answering:
>
>> C6, C9, C12, C15, C17, C20, C22, C33, D6, D13, D15a-e, D16a-e, D17, D19, D20, D21, D22, D23, D24, D25, D29, D30, E0, E1, E2, E5, E6, E10, E12, E14, E23, E24, E25, F6_50, F11_50, F13_50, F14_50, F15_50, F19_V1_50, F20_50, F21_50
>
> Questions offering reminder language asking the respondent to return to previous screen and complete the question:
>
>> C2, C5, C8, C11, C14, C16, C19, C21, C24, C28, C36, D5, D7, D9, D12, D14, D15_val, D15a-e, D16_val, D16a-e, D19_val, D20_val, D21_val, D22_val, D24_val, D25_val, D28, D31, D32, E3, E4, E7, E8, E11, E13, E17, E18, E19, E20, F10, G8, G10

4. Idiosyncrasies in CogEcon 2013

Version 2 of the web instrument added answer code 66, "We make the decisions separately," to question B6. Version 2 was published October 4, 2013 at approximately 9:10 AM, so respondents completing question B6 in the survey prior to that time did not have access to that answer option. Only two respondents were affected.

In the risk tolerance series of the mail survey (Section G), faulty skip logic may lead some respondents to answer G4 & G5. These responses should be ignored in the data unless one wants to test inter-question consistency.

C. Description of variables

1. Identification variables

Every respondent has three identification numbers, each described in the table below. The variable *sampid* uniquely identifies respondents. It is a 10-digit string variable that has *chhid* as the first six digits, followed by a zero ("0") and then *cpn* as the remaining three

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[4] For programming reasons, there were a few exceptions to this. Variables for which a separate reminder screen existed can be seen in the original data. These variables are not in the public release data files.

digits. We recommend keeping these three variables as string variables to prevent loss of digits.

Variable	Description
sampid	Unique ID for each respondent (10-digit string)
chhid	Household unique ID (6-digit string)
cpn	Person number ID (3-digit string)—identifies individuals within a household

2. Sample/system variables

Variable	Description
c4_result	Survey outcome result for those who were invited =1 for completed submissions =2 for partially completed submissions
c4_modeassign	Assigned mode =1 if mail survey =0 if web survey
c4_modesubmit	Submission mode =1 if mail survey =0 if web survey
c4_lastQ	Last question completed[5]
c4_compmo	Month in which survey was submitted
c4_compyr	Year in which survey was submitted

Please note the distinction between the mode that someone was invited to, and the mode submitted. Invitees were given the option to "switch modes" with the third reminder letter; additionally, if an invitee contacted us to say that they did not use the internet or could not complete the web questionnaire, we sent them a mail questionnaire.

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[5] This variable is useful for respondents who submitted a partially completed web survey, since it helps distinguish between people who answered most of the survey and those who completed very little of it.

3. Constructed variables

The dataset includes constructed variables for age at the time of the survey (*c4_age**), relationship status (*c4_relstat*), and an indicator for whether the individual is a household's "financial respondent" (*c4_finr*).

3.1 Age at date of survey completion

The variable *c4_age* contains respondents' age on the date they completed the survey. It was created using the same procedure CogUSA used to construct their age variables. First, calculate the number of days between the respondent's birthday and date they completed the survey. Then divide the number of days by 365.25 to convert units into years.

Birth year was available for all respondents, but 6 respondents did not have birth month or day available. The variable *c4_birth_flag* indicates whether neither day nor month are missing (N=702), both are missing (N=3), or only day is missing (N=3). When month is known but day is not, we calculated the age as if the day is the 15th. When both day and month are missing:

    i)   If survey was completed on or before July 1st, assume respondent has not yet had birthday that year (assign birthday to July 1).

    ii) If survey was completed after June 30, respondent already had their birthday that year (assign to June 30).

The variable *c4_compdate* contains the date the survey was completed.[6] For web respondents (N=497), date completed is the date the survey was submitted. For mail respondents, date completed is either the self-reported date completed (N=197), *c4_H3*, or is imputed using the date Survey Research Office (SRO) received the questionnaire (N=14). When it was missing, date completed was imputed as

$$\text{(date received) - (median delay)}$$

where median delay = median difference between date received by SRO and self-reported date completed for respondents for whom this information is available.

c4_compdate_flag indicates whether completion date comes from the Illume date stamp, self-reported date (H3), or from SRO records of the date received.

c4_age_flag indicates whether calculated age uses imputed birth date (N=6), imputed completion date (N=16), or no imputed values (N=686).

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[6] This variable is not available in the public release files, but the month and year are available in *c4_compyr* and *c4_compmo*.

Other age variables:

- *c4_age_y*: age in years, as an integer.
- *c4_age_m*: age in number of months.

3.2 Relationship status

c4_relstat is the respondent's relationship status. We used question D1 for mail respondents and we had web respondents verify the pre-loaded relationship status before starting Section B. Note that there are 3 respondents who claimed to be married in CogEcon 2013 but later in the questionnaire said they had been widowed at some point since January 2008. We suspect that these people are not referring to a remarriage in their CogEcon 2013 relationship status but cannot confirm with available information.

Code	Relationship status	CogEcon 2013
1	Married	447 (63.1%)
2	Partner with financial future	21 (3.0%)
3	Partner without financial future	7 (1.0%)
4	Single	233 (32.9%)
Total		708

c4_relstat_chng tells us whether relationship status changed since the previous wave. For most respondents this is the change since 2011, but for respondents who completed CogEcon 2009 but not CogEcon 2011 the change is based on 2009 to 2013.

Code	Relationship status	CogEcon 2013
0	No change	662 (93.5%)
1	Partnered to single	26 (3.7%)
2	Single to partnered	5 (0.7%)
3	Widowed	15 (2.1%)
Total		708

3.3 Financial respondent status

CogEcon asks all respondents about assets and debts. For household-level analysis, we recommend using values given by the designated financial respondent. The variable *c4_finr* equals 1 for the financial respondent, and 0 otherwise. *c4_finr_how* tells you how the financial respondent was chosen, as described below:

(1) If respondent was the only respondent in the household who completed CogEcon 2013, he/she is the de facto financial respondent (N=422).

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a. If respondent was the only person in a household invited to CogEcon 2013, he/she is the de facto financial respondent.

b. If two household members were invited to CogEcon 2013 but only one completed it, he/she is the financial respondent.

c. If two household members completed CogEcon 2013 but at least one of them claims to be single or partnered without a financial future, then both are assigned to be a financial respondent.[7]

(2) All other cases involve households with two respondents who agree they are married or partnered and planning a financial future together. We assign a financial respondent based on responses to questions about knowledge of their household finances (N=248).

a. D2: "Which member of your immediate family is most knowledgeable about your family's assets, debts and retirement planning?" The answer options were "Me", "My spouse/partner", "Both me and my spouse/partner" and "Someone else in the family."[8]

Respondents who answered "Both me and my spouse/partner" or "Someone else in the family" were asked a follow-up question:

b. D3: "Suppose you and your spouse/partner were asked to provide information about your combined assets, debts, and retirement plans. Between you and your spouse/partner, who could provide the most accurate information? Please check the box "Me" if you do not have a spouse or partner." The answer options were "Me" and "My spouse/partner."

If one respondent said "Me" to either D2 or D3, and the other did not disagree by also saying "Me" to either D2 or D3, then this person is considered the most knowledgeable and the designated financial respondent. If one respondent said "My spouse/partner" to either D2 or D3, and the spouse/partner did not disagree by also saying "My spouse/partner," then this spouse/partner is considered the most knowledgeable and the designated financial respondent.

(3) If we still have not assigned each household a financial respondent, we use responses to B5, which is the exact same at D2 but without the follow-up part (D3). (N=10).

a. B5: "Which member of your immediate family is most knowledgeable about your family's assets, debts and retirement planning?" The answer options

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[7] There were a few cases in which one person claimed to be married and the other single. There were also a few cases of partners, one of whom claims they have a financial future together and the other does not.

[8] This question is very similar to one used in the HRS for the same purpose.

were "Me", "My spouse/partner", "Both me and my spouse/partner" and "Someone else in the family."[9]

If one respondent said "Me" to B5 and the other did not disagree by also saying "Me," then this person is considered the most knowledgeable and the designated financial respondent. If one respondent said "My spouse/partner" and the spouse/partner did not disagree by also saying "My spouse/partner," then this spouse/partner is considered the most knowledgeable and the designated financial respondent.

(4) If we still have not assigned each household a financial respondent, we select the partner/spouse who used a larger number of objective information sources to complete the questionnaire (N=12). This was based on responses to H1 at the end of the questionnaire, and counted financial software, tax returns and account statements as objective sources of information.

(5) If we still had not assigned each household a financial respondent, we then select the partner/spouse on a case-by-case basis (N=16). Selection was based on an assessment of responses to key questions about income and financial assets, and financial respondent status in 2011.

Please see Cognitive Economics Study: Data Description for documentation about how the financial respondent was selected in 2008, 2009 and 2011. The approach for selecting the financial respondent for each household in CogEcon 2013 is similar to the procedure used for CogEcon 2011.

D. CogEcon 2013 survey outline and notes

This part of the documentation contains an outline of the questions and, where relevant, notes things to consider when working with these data. The questionnaire had eight sections, A thru H.

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[9] This question is very similar to one used in the HRS for the same purpose.

1. Section A: Introductory questions, self-assessments and Internet usage

A1-A4: E-mail and web usage

A4AW-A4LW: Internet usage, tracking finances online

Notes: These questions were newly introduced to CogEcon 2013 and were asked only on the web version.

A5-A7: Self-assessed health, income tax, and financial assets

2. Section B: Financial sophistication, household decisionmaking

Notes: Questions B1, B5, B6, B7, & B9-B18 were newly introduced in CogEcon 2013. They are meant to capture respondent information on who does the financial healthcare decision-making in households. In addition, they gather information on who prepares tax returns or prepares the information needed for them.

B1-B2: Self-assessed confidence

B3-B6: Financial management

Comparability Details: Web respondents who earlier indicated that they are single did not receive B5-B6 but some mail respondents who indicated single answered with reference to a spouse. Since the question does not specify a period of reference, they may be referring to a time when they were married.

Notes: For question B4, the number in the variable subscript corresponds to the number of the checkbox associated with the source of information. Checkbox 8 was "other", which provided space for respondents to answer. Text responses that corresponded to options 1 to 7 were then recoded as such. The variable *c4_B4_8_recode* indicates that the respondent formerly selected "other" but was later recoded. Text responses to B4 are not publicly available.

B7-B11: Tax returns

Comparability Details: For question B11, the web version asks a differently worded form of the question, B11a(web). Question B9 is split into two questions on the web version, one being asked to those who are married or partnered and one being asked to those single or partnered without a financial future.

Notes: For question B10, the number in the variable subscript corresponds to the number of the checkbox associated with the source of information. Checkbox 9 was "someone else", which provided space for respondents to answer. Text responses that corresponded to options 1 to 8 were then recoded as such. The variable *c4_B10_9_recode* indicates that the respondent formerly selected

"someone else" but was later recoded. Text responses to B10 are not publicly available.

B12-B18: Health insurance decision-making

Comparability Details: Web respondents who indicated they were single did not receive B11 to B18 but some mail respondents who indicated single answered with reference to a spouse.

Notes: For questions B15 and B18, the variable subscript indicates the source of information. Those who selected "someone else" were asked to provide a text response. Responses that corresponded to one of the existing options were recoded as such. The variables *c4_B15_ELSE_RECODE* and *c4_B18_ELSE_RECODE* indicates that the respondent originally selected "someone else". The remaining text responses were then categorized in *c4_B15_ELSE_OTHER* and *c4_B18_ELSE_OTHER*. Text responses to B15 and B18 are not publicly available.

3. Section C: Income, employment and retirement

Notes: Some respondents gave extremely small dollar amounts for questions C2, C28, C36 that asked for annual income. In many cases, they may have entered in thousands instead of dollars, or there might have been a keystroke error. The end user is advised to treat these with caution and adjust them appropriately before use.

C1: Number of household members

C2-C24: Household income

Comparability Details: Questions C4A, C7A, C10A, & C13A were included only in the web version and asked for a specific reason why the respondent or spouse claimed their social security benefits when they did, or why they changed their plans. These text responses are not available publicly.

Notes: Many questions began by asking the respondent to provide a "yes/no" answer to whether they receive a certain type of income. If the respondent selected "yes", they are then asked for a dollar amount. Some respondents selected "yes" but followed up with a dollar amount of zero. This is more prevalent amongst web respondents.

C25-C40: Labor supply and earnings (in 2012); current employment status; retirement plans

Notes: The first few questions asked about the respondent and remaining ones asked about the respondent's spouse/partner. These questions were before the instructions (associated with question D1) distinguishing between partners with whom someone is planning a financial future. There may be responses about

partners in this section even in cases where wealth questions do not include the partner's assets.

Questions C33 to C40 were skipped for web respondents if they claimed to be single, but some single mail respondents answered them. In C37, three single mail respondents claimed their spouse is deceased (indicates that some respondents who are widowed regard themselves as having a spouse). There are also two web respondents who claimed to be married and partnered without financial future at the beginning of the survey but then responded in C37 that spouse/partner is deceased.

For questions C26 to C28, and C34 to C36, if the respondent indicated zero working hours or weeks but nonzero earnings, then the zero value for hours or weeks is replaced with "missing". Likewise, if the respondent indicated nonzero hours or weeks but zero earnings, earnings are also replaced with "missing".

For questions C29 and C37, the number in the variable subscript corresponds to the number of the checkbox associated with each employment status. The ninth check box is for "other" and provided space for respondents to answer. Text responses that corresponded to options 1 to 8 were recoded. The variables *c4_C29_9_recode* and *c4_C37_9_recode* indicate that the respondents originally selected "other" for the respective questions.

4. Section D: Household finances

D1-D3: Relationship status, household financial decisionmaking

Comparability details: D1 was only asked on the mail survey and responses are in the variable *c4_D1_mail*. The question was used as a way to then give directions for questions about assets and debts. The answer to this question determined whether the asset and debt questions were asked with respect to the respondent only, or with respect to the respondent and his/her significant other.

Question D1 was not needed on the web survey because the information was already contained in previous answers (in Section B) and questions were tailored automatically based on this information.

Married respondents and those in "marriage-like" relationships who said they were "planning a financial future together" were asked to include the assets and debts of their spouse/partner in the questions that followed. Singles and respondents in "marriage-like relationships," but who were not planning a financial future with their significant others, were asked only about their own assets and debts.

Question D2 on the web version only offered the options "my spouse/partner" and "both me and my spouse/partner" if R had a spouse or partner.

Notes: D2 and D3 are used to select a financial respondent for each household in the sample (*c4_finr*); see Section C.3.3 for more detail.

For question D2, respondents who selected "someone else in the family" were also asked to provide a text response to their answer. These responses are classified into 1) child or grandchild, 2) siblings, 3) other relative or 4) other/missing as indicated by the variable *c4_D2_other*. Text responses to D2 are not available publicly.

D4- D14: Housing wealth—primary residence and other property

Notes: Respondents who do not own their primary residences were asked whether they pay rent (D8-D9). If they neither own nor rent their primary residence, they were then asked about their living arrangements in D10. Two respondents who claimed earlier that they neither own nor pay rent indicated that they were paying a mortgage. D4 (home ownership) and D5 (presence of mortgage) have been recoded to "yes" for these respondents. Text responses to D10 are not publicly available.

D15: Financial assets in tax-advantaged retirement assets

Comparability details: When asking for the breakdown of the total value into asset categories, the web version piped in totals and gave cues to help Rs give values that add up; this is not possible in the mail version.

D16: Financial assets outside of tax-advantaged retirement accounts

Comparability details: When asking for the breakdown of the total value into asset categories, the web version piped in totals and gave cues to help Rs give values that add up; this is not possible in the mail version.

D17-D23: Asset Allocation

Notes: D19-D22: These items asked for values of assets if the respondent holds more than $5000 in that asset. On the mail, Rs can give values <$5000; on web, they are constrained to give a value above $5000. Also, range 3 on the web (the lowest possible) starts at $5,000, while the corresponding mail category starts at $5001 because offering a separate range card for these questions would be confusing.

D24-D25: Farm and business ownership; any other assets

Notes: Questions D24 and D25 asked about other assets. Question D27 asked about ownership when above 5% of the business or partnership, and D28 asked for the value of other assets if worth more than $5000.

D26-D32: Credit and Financial distress

5. Section E: Savings and consumption

E0-E11: Active savings

Comparability details: Respondents were told to skip questions E1 thru E5 if neither the respondent nor the spouse/partner had an employer in 2012. On the web there was a question, E0, asking if they had an employer in 2012. E11 is always asked in the mail version, but only if D15=yes in web version.

E12-E16: Distributions from tax-advantaged retirement accounts

Notes: E15 and E16 were repeated from 2011, but answer options were modified to include a response for taking the minimum withdrawal option in 2013.

E17-E20: Household spending

Comparability details: Mail questionnaires did not allow range responses. The web survey asked for a range if the respondent skipped the question asking for an exact value.

E21-E22: Vehicle assets and loans

E23-E25: Spending adjustments

6. Section F: Expectations

Comparability Details: Probability questions on the web version ask follow-up questions to "50%" responses. These are meant to clarify whether the respondent meant that the probability is 50/50 or if the respondent did not know, and were not asked in the mail version. These questions include F6_50, F11_50, F13_50, F14_50, F15_50, F19_V1_50, F20_50, F21_50.

F1-F2: Inflation

F3-F6: Subjective probability questions; future increase in home value

Comparability details: The web version included two probability follow-up questions that were only asked if the respondent had answered less than two questions, F5AW and F5BW, incorrectly.

F7-F13: Chances of working in the future

Comparability Details: Questions F7, F9 & F12 were only asked on the mail version. On the mail surveys, questions F9 & F12 prompt the respondent whether they should answer F10-F11 and F13-F14, respectively. On the web version, a preloaded age variable is used to determine whether the respondent should be asked each set of questions. F10-F15 were only asked if respondents were of a relevant age. F5AW and F5BW were asked only on the web version. F8 depends

on F7 on the mail version. On the web version it depends on work status from Section C.

F14-F15: Hypothetical changes in value of retirement accounts

Notes: Questions F14 and F15 asked about responses to hypothetical changes in the value of retirement accounts. The mail version always asked about a $50,000 change. On the web version, questions were asked only if respondents said they had retirement accounts (yes to D15), and the hypothetical change depended on their response to D15:

(1) If respondent gave an exact value for D15, then a round number of approximately 30% of their total reported value in D15 was presented.
(2) If respondent gave a range for D15, then a range representing approximately 30% of their reported range was presented.
(3) If respondent has retirement accounts but did not provide a value or range, then "30%" was presented.

The flag variable *c4_F14_flag* equals 1 if a value was used, 2 if a range was used, and 3 if "30%" was used. The hypothetical values and ranges presented are in *c4_F14_hyp_exct_pre* and *c4_F14_hyp_rng_pre* respectively. Note that these also apply to question F15, which asked about a hypothetical gain of the same magnitude. *c4_F14_hyp_loss_pre* and *c4_F15_hyp_gain_pre* combine these values according to the table below.

Range selected in D15	Range presented in F14, F15	Value assigned in *c4_F14_hyp_loss_pre* , *c4_F15_hyp_gain_pre*
$0		0
$1-$2,500	$0 - $750	375
$2,501-$5,000	$750 - $1,500	1125
$5,001-$10,000	$1,500 - $3,000	2250
$10,001-$25,000	$3,000 - $7,500	5250
$25,001-$50,000	$7,500 - $15,000	11250
$50,001-$100,000	$15,000 - $30,000	22500
$100,001-$250,000	$30,000 - $75,000	52500
$250,001-$500,000	$75,000 - $150,000	112500
$500,001-$1,000,000	$150,000 - $300,000	225000
More than $1,000,000	More than $300,000	420000
Cannot provide a range		

F17-F22: Subjective probability questions about housing, unemployment, Social Security and stocks:

> *Comparability details:* F18 provided a range option on the web if question was initially skipped by the respondent.

> F19_V1_50, F20_50, F21_50 were only asked in the web version, as follow-ups to 50% answers.

7. Section G: Health, taxes and risk tolerance

G1-G5: Risk tolerance

> *Notes:* Questions G1-G5 can be used to estimate risk preference parameters. The answer to G1 can be used to create the first "bound" on measures of risk aversion, and determines whether respondents should then answer questions G2-G3 or G4-G5 to determine the other bound.

> *Comparability details:* Web respondents were asked G4 only asked if the respondent answered "no" to G1. Mail respondents were asked G4 if they answered "no" to G1 or if they answered "yes" to G3. Responses to G4 resulting from the latter case should be ignored when imputing risk tolerance.

G_SliderQuestions: Long-Term Care

> *Notes:* The long-term care sliders were introduced in the 2013 CogEcon survey. The questions present the respondent with hypothetical situations regarding long-term care and offer a slider bar to precisely capture the financial decision made. More information about these slider questions can be found in Appendix B.

> *Comparability details:* The slider questions are only asked of web respondents.

G6: Tax Preparation

> *Notes:* Question G6 was newly introduced in the CogEcon 2013 survey.

G7-G8: Federal income tax rates

G9-G10: Widowed since January 2008

> *Notes:* Some respondents answered "yes" to G9 even though they were widowed prior to January 2008.

8. Section H: Closing questions

H1: Use of financial records to answer questions

H2: Personal assistance to answer questions

> *Comparability details:* Slightly different wording between mail and web versions. On the web, respondents who said someone helped with filling out the survey were given space to explain. Text responses are not publicly available.

H3-H5: Date and time completing survey

> *Comparability details:* H3 was only asked in the mail survey because the information was saved automatically for web respondents. The variables *c4_comyr* and *c4_compmo* combines data from mail and web.

E. Imputations and Calculated Variables

1. Income and wealth variables

Respondents had two ways to answer questions about the value of income, assets and debts—either by providing an exact value or by selecting a range of values from the list on the "range card." In the mail questionnaire, respondents saw the "range card" option at the time they were asked for the exact value; web respondents were asked for a range only if they skipped the question asking for an exact value.

Total value: exact values and range

Mail respondents were asked to either provide an exact value or to select a range of values from a list of ranges. In contrast, web respondents were first asked to provide an exact value. If they skipped the question they were subsequently asked to select a range of values from the ranges listed. In some instances, a range option was not given on the mail questionnaire but was used if the respondent did not provide a value in the web survey. These instances are marked in the range option tables as (web).

An exact value was imputed from each range using the mid-point of the range. For the uppermost bracket, 1.4 times the lower bound was used.

Value assigned for ranges chosen

All of the variables with the suffix _val are given in terms of monetary value. See Appendix 1 to see the different range options offered in the survey and the questions for which each set of range options was offered.

Appendix 1: Range options provided throughout survey

Nine different range options were provided on the survey, some on both versions and others only on the web. This was done to more accurately capture the reasonable range of values for each question.

Range options 1	Range selected	Value assigned
C2, C28, C36, D5, D7, D12, D14, D15, D15A-E, D16, D16A-E, D19-D22[10], D24, D25, D31(web), E11(web), E13(web), F10(web)	$0	0
	$1-$2,500	1250.5
	$2,501-$5,000	3750.5
	$5,001-$10,000	7500.5
	$10,001-$25,000	17500.5
	$25,001-$50,000	37500.5
	$50,001-$100,000	75000.5
	$100,001-$250,000	175000.5
	$250,001-$500,000	375000.5
	$500,001-$1,000,000	750000.5
	More than $1,000,000	1400001.4
	Cannot provide a range	

Range options 2	Range selected	Value assigned
E17(web), E18(web),	$0	0
	$1-$25	12.5
	$26-$50	38
	$51-$100	75.5
	$101-$150	125.5
	$151-$250	200.5
	$251-$350	300.5
	$351-$500	425.5
	$501-$750	625.5
	$751-$1,000	875.5
	$1,001-$1,500	1250.5
	More than $1,500	2101.4

---

[10] In the web version, only ranges corresponding to $5,000 and above were presented. On the mail survey, respondents were presented with all the options but instructed to only select a range of $5,001-$10,000 or above.

	Cannot provide a range	

Range options 3	Range selected	Value assigned
C16(web), C19(web), C21(web), C24(web)	$0	0
	$1-$250	125.5
	$251-$500	375.5
	$501-$1,000	750.5
	$1,001-$1,500	1250.5
	$1,501-$2,500	2000.5
	$2,501-$3,500	3000.5
	$3,501-$5,000	4250.5
	$5,001-$7,500	6250.5
	$7,501-$10,000	8750.5
	$10,001-$15,000	1250.5
	More than $15,000	21001.4
	Cannot provide a range	

Range options 4	Range selected	Value assigned
C5(web), C8(web), C11(web), C14(web)	$0	0
	$1-$250	125.5
	$251-$500	375.5
	$501-$1000	750.5
	$1001-$1500	1250.5
	$1501-$2000	1750.5
	$2001-$2500	2250.5
	$2501-$3000	2750.5
	$3001-$3500	3250.5
	More than $3,500	4901.4
	Cannot provide a range	

Range options 5	Range selected	Value assigned
D9(web)	$0	0
	$1-$250	125.5
	$251-$500	375.5
	$501-$1000	750.5
	$1001-$1500	1250.5
	$1501-$2000	1750.5
	$2001-$3000	2500.5
	$3001-$5000	4000.5
	$5001-$10,000	7500.5
	More than $10,000	14001.4
	Cannot provide a range	

Range options 6	Range selected	Value assigned
D28(web)	$0	0
	$1-$500	250.5
	$501-$1000	750.5
	$1001-$2500	1750.5
	$2501-$5000	3750.5
	$5001-$10,000	7500.5
	$10,001-$25,000	17,500.5
	$25,001-$50,000	37,500.5
	$50,001-$100,000	75,000.5
	$100,001-$250,000	175,000.5
	More than $250,000	350,001.4
	Cannot provide a range	

Range options 7	Range selected	Value assigned
E3(web), E4(web), E19(web)	$0	0
	$1-$1000	500.5
	$1001-$2500	1750.5
	$2501-$5000	3750.5
	$5001-$10,000	7500.5
	$10,001-$20,000	15,000.5
	$20,001-$30,000	25,000.5
	$30,001-$40,000	35,000.5
	$40,001-$50,000	45,000.5
	More than $50,000	70,001.4
	Cannot provide a range	

Range options 8	Range selected	Value assigned
E7(web), E8(web)	$0	0
	$1-$1000	500.5
	$1001-$2500	1750.5
	$2501-$5000	3750.5
	$5001-$7500	6250.5
	$7501-$10,000	8250.5
	$10,001-$12,500	11250.5
	More than $12,500	17501.4
	Cannot provide a range	

Range options 9	Range selected	Value assigned
E20(web)	$0	0
	$1-$1000	500.5
	$1001-$2500	1750.5
	$2501-$5000	3750.5
	$5001-$10,000	7500.5
	$10,001-$25,000	17,500.5
	$25,001-$50,000	37,500.5
	$50,001-$100,000	75,000.5
	$100,001-$250,000	175,000.5
	More than $250,000	350,001.4
	Cannot provide a range	

Appendix 2: Long-term care slider questions

CogEcon 2013 added a new format for long-term care questions that allowed respondents to allocate hypothetical money into two different long-term care plans.

The slider questions vary in the total amount that the respondent is given to invest and the multiplier for the insurance. Two questions ask about an amount of $100,000 and one asks about $50,000. The multiplier is either two or four for the insurance payment.

Description of slider questions

The slider questions are preceded by a detailed introduction:

> The next section asks you to think about long-term care.
>
> We will ask you to imagine a situation and describe the rules that apply. We will then ask you about choices that you would make. Even if it is hard to imagine yourself in this situation, please try your best. Finally we will ask you how changes in the situation affect your choices.
>
> We are interested in how you trade off your desire for resources when you do and when you do not need help with <u>activities of daily life</u> (ADLs). ADLs are activities such as eating, dressing, bathing, walking across a room, and getting in or out of bed that are required on an everyday basis. If people need help with ADLs and live alone or otherwise cannot get help from family or friends, they use <u>long-term care</u> services in their home or a nursing home.
>
> This scenario is hypothetical and does not reflect a choice you are likely ever to face.
>
>
> Suppose you are 80 years old, live alone, rent your home, and pay all your own bills. Now, suppose that there is a chance that you will need help with ADLs in the coming 12 months. If you need help with ADLs you will need long-term care.
>
> - There is a <u>25%</u> chance that you <u>will</u> need help with ADLs for all of next year.
>
> - There is a <u>75%</u> chance that you <u>will not</u> need any help at all with ADLs for all of next year.
>
>
> You have <u>$100,000</u> to divide between two plans for the next year. This choice will affect your finances for next year alone. At the end of next year, you will be offered the same choice with another $100,000 for the following year.
>
> - Plan C is hypothetical ADL insurance that gives you money if you <u>do</u> need help with ADLs.

- o For every $1 you put in Plan C, you will get <u>$4</u> to spend if you need help with ADLs.

- o From that money, you will need to pay all your expenses including long-term care at home or in a nursing home and any other wants, needs, and discretionary purchases.

- Plan D gives you money only if you <u>do not</u> need help with ADLs.

  - o For every $1 you put in Plan D, you will get <u>$1</u> to spend if you <u>do not</u> need help with ADLs.

  - o From that money, you will need to pay for all of your wants, needs, and discretionary purchases.

Here are the rules for this scenario.

- *You can only spend money from Plan C or Plan D next year. You do not have any other money.*

- *If you want to be able to spend whether or not you need help with ADLs, you need to put money into both plans.*

- *If you need help with ADLs, all money in Plan D is lost.*

- *If you do not need help with ADLs, all money in Plan C is lost.*

- *Any money that is not spent at the end of the year cannot be saved for the future, be given away, or be left as a bequest.*

- *You must make your choice before you know whether you need help with ADLs. Once you make your choice, you cannot change how you split your money.*

- *Regardless of whether or not you need help with ADLs, your hospital, doctor bills, and medications are completely paid by insurance.*

- *Other than Plan C, you have no other resources to help with your long-term care. <u>You</u> have to pay for any long-term care you may need from Plan C.*

- *There is <u>no public-care option or Medicaid</u> if you do not have enough money to pay for a nursing home or other long-term care.*

- *An impartial third party that you trust will verify whether or not you need help with ADLs immediately, impartially, and with complete accuracy.*

The first slider question is as follows:

    <u>Choice 1</u>:

Again, suppose you are 80 years old, live alone, rent your home, and pay all your own bills.

- There is a 25% chance that you will need help with ADLs for all of next year.

- There is a 75% chance that you will not need any help at all with ADLs for all of next year.

You have $100,000 to divide between two plans for the next year.

- Plan C is hypothetical ADL insurance that gives you money if you do need help with ADLs. For every $1 you put in Plan C, you will get $4 to spend if you need help with ADLs.

- Plan D gives you money only if you do not need help with ADLs. For every $1 you put in Plan D, you will get $1 to spend if you do not need help with ADLs.

Please make your decision on splitting money into Plan C and Plan D by clicking on the scale below. To put more money into Plan C, move the slider to the right. To put more money into Plan D, move the slider to the left. The numbers in the boxes will change as you move the slider to let you know how much you will receive if you need long-term care and if you do not.

Please move the slider to see how it works. When you are ready, place the slider at the split you want and click "Next" to enter your choice."

An example of the slider referenced in the long-term care questions can be seen below:

| Put $20,000 in Plan C |
| Get $80,000 if long-term care needed |

| Put $80,000 in Plan D |
| Get $80,000 if no long-term care needed |

All money in Plan D   **All money in Plan C**

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Constructing variables from responses to slider questions

The starting value for the amount in Plan C is randomly selected and is represented by the location of the slider. This is provided in the variable *c4_SLIDER_#_PRELOAD*, for each of the three slider questions, #=1,2,3. For respondents who actively changed the value from the preloaded amount, the selected value is given in *c4_SLIDER_#_VALUE*. The variable *c4_CA_SLIDER_#* is the same variable but with the default, pre-loaded value for respondents who did not select a different value. These respondents were then asked a follow-up question about whether this meant they wanted to leave the preloaded amount in Plan C. Respondents who answered "yes" then have the preloaded value as their response. The final calculated variable, *c4_SLIDER#_CALC*, is equal to:

- reported value *c4_SLIDER_#_VALUE*, when they selected something other than the default pre-loaded value;
- preloaded value *c4_SLIDER_#_PRELOAD*, when they did not change the slider and then answer "yes" that they prefer the default amount in Plan C;
- missing if respondent completed the mail (rather than web) questionnaire or skipped the question.

These variable names are the same as they had been programmed in the survey, but with the prefix c4_ added. The final calculated variable, *c4_SLIDER_#_CALC*, was added at the data cleaning stage.

References

The American Association for Public Opinion Research. 2011. Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 7th edition. AAPOR.

Fisher, G.G., Gideon, M., Hsu, J. & McFall, B.H. (2011). "Cognitive Economics Study: Development and Methodology," University of Michigan.

Fisher, G.G., Gideon, M., Hsu, J., & McFall, B.H. (2012). "Cognitive Economics Study: Data Description," University of Michigan.

Gideon, M., Koch, S., & McFall, B.H. (2013). "Cognitive Economics Study: CogEcon 2011 Documentation," University of Michigan.

Hsu, J., Fisher, G.G., & Willis, R.J. (2008). "Internet access and cognitive ability: Analysis of selectivity of internet interviews in the Cognitive Economics Survey," Conference on Measurement and Experimentation with Internet Panels: Innovative features of Internet Interviewing. Zeist, Netherlands.

Hsu, J. & McFall, B.H. (2011). "Mode effects in mixed-mode surveys: Insight from the Cognitive Economics Study," RAND/University of Michigan Workshop on Internet Interviewing and the Health and Retirement Study. Aspen, Colorado.