

## Technical Note: Financial Capability Scale for Young Adults (FCS-Y)

March 2017

### 1. Modifying the Financial Capability Scale for use with Young Adults

The Center for Financial Security (CFS) developed the Financial Capability Scale (FCS) as a standardized 6-question tool for tracking clients' progress in financial coaching, counseling, and education programs.<sup>1</sup> The FCS questions focus on clients' self-reported behavior. Some programs use the FCS with young adults ages 18 to 22 enrolled in higher education or just entering the workforce. The FCS includes multiple items that are not as relevant for this age group, however. In response, CFS modified the FCS for young adults as the "FCS-Y." Table 1 compares the two versions of the scale. The response options are the same between the two versions, and both scales sum to scores ranging from 0-8.

**Table 1.** Comparison of Questions between the FCS-Y and Standard FCS (changes in **bold**)

| FCS for Young Adults (FCS-Y)  | Standard FCS   | Options                    |
|---|--|----------------------------|
| 1. Do you currently have a personal budget, spending plan, or financial plan?   | 1. Do you currently have a personal budget, spending plan, or financial plan?  | Yes, No                    |
| 2. How confident are you in your ability to achieve a financial goal you set for yourself today?  | 2. How confident are you in your ability to achieve a financial goal you set for yourself today?   | Not at all, Somewhat, Very |
| <b>3. If you had an unexpected expense, how confident are you that you could come up with money to make ends meet within a few weeks from any source?</b> | 3. If you had an unexpected expense or someone in your family lost a job, got sick or had another emergency, how confident are you that your family could come up with money to make ends meet within a month? | Not at all, Somewhat, Very |
| <b>4. Do you regularly put money aside for a future use, such as paying bills, emergency savings, or a long-term financial goal?</b>                      | 4. Do you currently have an automatic deposit or electronic transfer set up to put money away for a future use (such as savings)?  | Yes, No                    |
| 5. Over the past month, would you say <b>your</b> spending on living expenses was less than <b>your total income or other resources?</b>                  | 5. Over the past month, would you say your family's spending on living expenses was less than its total income?  | Yes, No                    |
| 6. In the last 2 months, have you been charged a late fee on a bill?  | 6. In the last 2 months, have you been charged a late fee on a loan or bill?   | Yes, No                    |

The two scales measure similar constructs. Question 1 measures planning behavior. Question 2 measures confidence in engaging in goal-based behaviors. Question 3 measures liquidity and resilience to financial shocks. In the FCS-Y, the context of Question 3 is shifted to encompass an expense, since many young adults are not fully employed, and the modified question focuses on the individual rather than family. Question 4 measures behaviors that people use to force themselves to save; the FCS-Y recognizes that young adults may not have regular paychecks and

<sup>1</sup> Collins, J.M. & O'Rourke, C. (2013) Financial Capability Scale (FCS), University of Wisconsin Madison, Center for Financial Security. doi: 10.5281/zenodo.57102. Additional information is available at [fyi.uwex.edu/financialcoaching/measures](http://fyi.uwex.edu/financialcoaching/measures).

thus has a broader perspective on savings. Question 5 measures spending management. The FCS-Y adapts the question to young adults, who are less likely to be fully employed and may rely on other sources of economic support to make ends meet than employment income. Finally, Question 6 measures attention to on-time bill payment and is the same in both versions.

## **2. Piloting the FCS-Y in a Survey of College Students**

In February 2017, CFS included the FCS-Y in an online survey of college students at the University of Wisconsin-Madison. The survey included the FCS-Y questions in Table 1 along with additional questions around respondents' financial management behaviors, financial knowledge, and demographics. A copy of the survey appears in Appendix A. The survey was administered online using Qualtrics and emailed to 15,191 undergraduates on a list provided by the Office of the Registrar. The survey was collected anonymously, and respondents had the opportunity to enter their contact information into a separate database for a chance to win a \$50 Amazon gift card. A total of 847 surveys were received, for a response rate of 5.6%. The project was approved by UW-Madison's Institutional Review Board.

## **3. Summary Statistics**

Table 2 shows average responses to the survey questions. FCS-Y scores averaged about 5.5 on a 0-8 scale, with a standard deviation of 1.5. The average respondent was 19.6 years of age (ranging from 18-22). About one-third of respondents were male. Most respondents had a parent with a college degree. Three-quarters had a 3.1 GPA or better, and just under one-half were enrolled in a STEM (Science, Technology, Engineering, and Math) program. Just over 70% were confident they could handle an unexpected expense without asking a family member or someone else for help. Nearly all respondents had a debit card (98%), and about one-half had a credit card. Only 28% had checked their credit report in the past year. Just under 55% received financial aid, and two-thirds had submitted a FASFA form in the prior year. Fifty-nine percent of respondents reported working during the school year, and just over one-half lived in on-campus housing. Two-thirds were responsible for paying bills in the past month. Nearly two-thirds reported having taken a financial literacy course at some point in the past. Based on a four-item financial socialization scale, students reported a moderate level of learning from their families about financial issues. Overall, the summary statistics show that survey respondents generally represent the target population, young adults still developing their financial independence.

The final two variables in Table 2 are the main measures used to test the validity of the FCS-Y: the Consumer Financial Protection Bureau's 5-item Financial Well-Being (FWB) Scale, and a 5-question financial literacy quiz.<sup>2</sup> The average FWB score was 55 out of 100, and the average respondent answered 3.3 of the five financial literacy questions correctly.

The remainder of this document explores the relationships between the FCS-Y and other measures included in the survey.

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<sup>2</sup> Consumer Financial Protection Bureau, "Measuring financial well-being: A guide to using the CFPB Financial Well-Being Scale." Available at [www.consumerfinance.gov/data-research/research-reports/financial-well-being-scale](http://www.consumerfinance.gov/data-research/research-reports/financial-well-being-scale). The five financial literacy questions come from the National Financial Capability Study: [www.usfinancialcapability.org](http://www.usfinancialcapability.org).

**Table 2.** Survey Summary Statistics

| <b>Variable</b>   | <b>Average (Standard Deviation)</b> |
|---|-------------------------------------|
| FCS-Y (0-8)   | 5.47<br>(1.50)                      |
| <b>Demographics</b>   |                                     |
| Age   | 19.59<br>(0.88)                     |
| Male  | 0.33<br>(0.47)                      |
| Mother BA+  | 0.68<br>(0.47)                      |
| Father BA+  | 0.69<br>(0.46)                      |
| GPA 3.1+  | 0.77<br>(0.42)                      |
| Stem major  | 0.47<br>(0.50)                      |
| Confident in meeting an unexpected<br>expense w/o asking family | 0.70<br>(0.46)                      |
| Have debit card   | 0.98<br>(0.14)                      |
| Have credit card  | 0.48<br>(0.500)                     |
| Obtained credit report in past 12<br>months                     | 0.28<br>(0.45)                      |
| Receive financial aid   | 0.55<br>(0.50)                      |
| Submitted FAFSA   | 0.66<br>(0.47)                      |
| Work during school year   | 0.59<br>(0.49)                      |
| Live in university housing                                      | 0.52<br>(0.50)                      |
| Responsible for paying bills                                    | 0.66<br>(0.47)                      |
| Participated in financial literacy course                       | 0.65<br>(0.48)                      |
| Financial socialization scale (0-4)                             | 1.94<br>(0.69)                      |
| <b>Validation Measures</b>                                      |                                     |
| Financial Well-Being (0-100)                                    | 54.93<br>(10.43)                    |
| Financial literacy (0-5)  | 3.26<br>(1.224)                     |

N=874

#### 4. FCS-Y and Financial Well-Being

The survey included the Consumer Financial Protection Bureau's 5-item Financial Well-Being (FWB) Scale, a set of subjective questions that measure respondents' sense of financial security and control over their finances. The scale was weighted using the standardized lookup table; respondents' scores ranged from 25 to 82 on the 0-100 scale. Figure 1 plots predicted FCS-Y scores based on respondents' FWB scores. Overall, predicted FCS-Y scores follow a positive trajectory relative to FWB scores.

**Figure 1.** Financial Well-Being as a Predictor of FCS-Y Scores

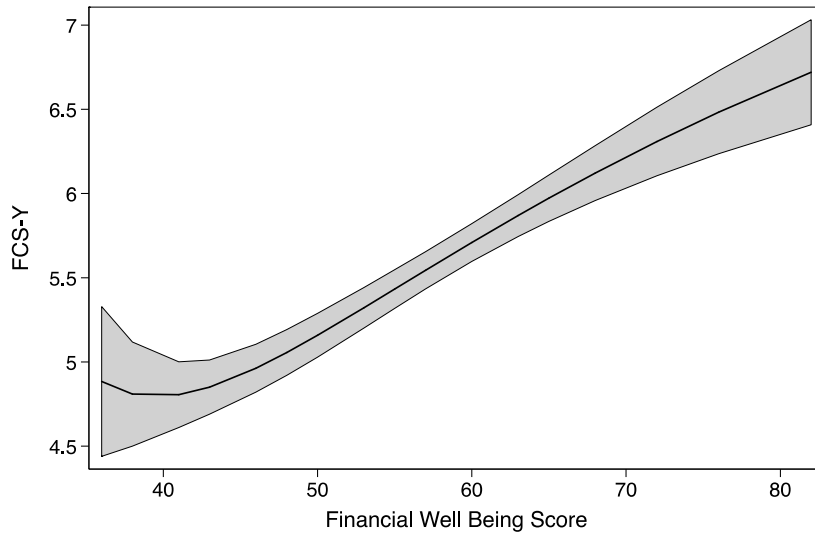
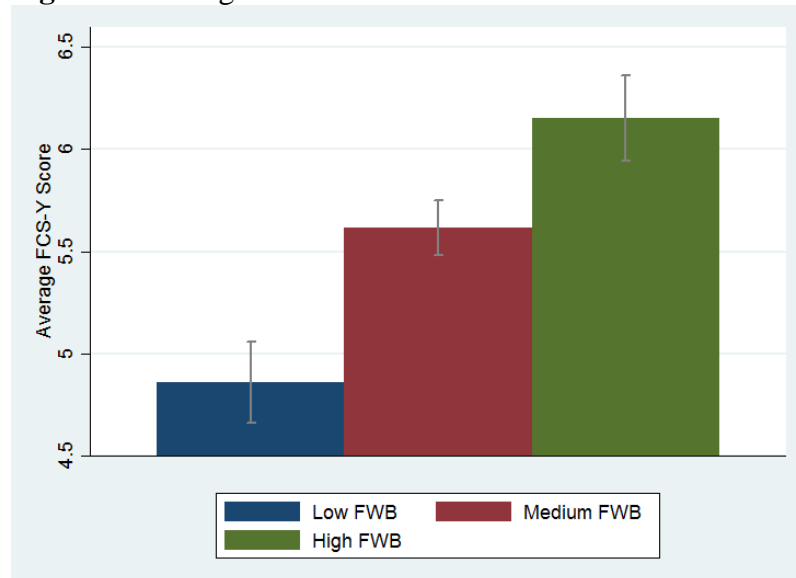


Figure 2 displays average FCS-Y scores and 95% confidence intervals based on how respondents scored on the FWB scale. Using raw rather than lookup scores, respondents were categorized into three groups based on their FWB scores: Low=0-9 Medium=10-15 High=16-20. As expected, the higher the FWB group, the higher the associated FCS-Y score.

**Figure 2.** Average FCS-Y Scores Based on Financial Well-Being



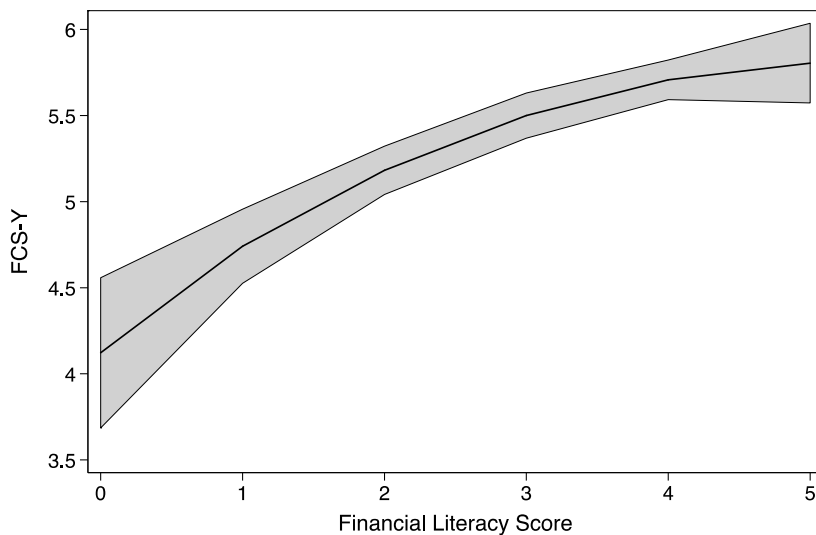
## 5. FCS-Y and Financial Literacy Quiz Scores

The survey included five questions that measure respondents' objective financial knowledge:

- Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? (more than \$102, same, less than \$102)
- Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? (more than today, same, less than today)
- If interest rates rise, what will typically happen to bond prices? (rise, fall, stay the same, no relationship)
- A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less. (True/False)
- Buying a single company's stock usually provides a safer return than a stock mutual fund. (True/False)

Respondents were scored 0-5 depending on the number of questions they answered correctly. Figure 3 plots predicted FCS-Y scores based on the number of financial literacy questions respondents answered correctly; the gray band is a 95% confidence interval. Overall, FCS-Y scores follow a positive trajectory relative to financial literacy.

**Figure 3.** Financial Literacy as a Predictor of FCS-Y Scores



Similarly, Figure 4 categorizes respondents into three groups based on their financial literacy scores: Low=0-2 questions correct out of 5, Medium=3-4 correct, and High=5 correct. The bars again correspond to 95% confidence intervals. Overall, respondents with higher financial literacy also tend to score higher on the FCS-Y.

**Figure 4.** Average FCS-Y Scores Based on Financial Literacy Quiz Score Levels

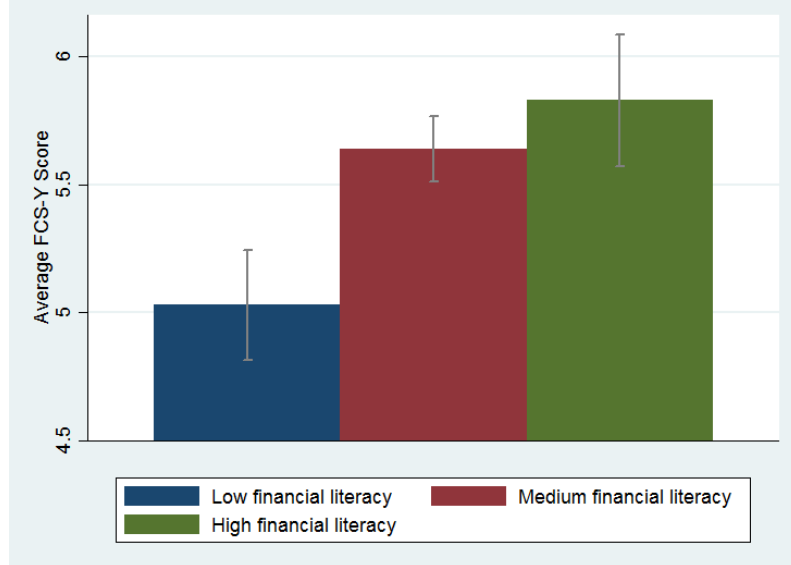


Table 3 uses OLS regression analysis to test whether the relationships between respondents' FWB and financial literacy scores and their FCS-Y scores hold when controlling for other factors in the dataset. Overall, FWB and financial literacy are statistically significant and positively related to FCS-Y scores across all three models. Other notable variables that have a statistically significant relationship with the FCS-Y include confidence in ability to come up with own funds within a few weeks to cover an unexpected expense, responsibility for paying bills, and financial socialization.

**Table 3.** Regression Analysis of FCS-Y Scores

|  | (1)<br>FCS-Y          | (2)<br>FCS-Y          | (3)<br>FCS-Y          |
|--|-----------------------|-----------------------|-----------------------|
| Financial Well-Being   | 0.0392***<br>(0.0045) | 0.0339***<br>(0.0046) | 0.0349***<br>(0.0047) |
| Financial literacy   | 0.2331***<br>(0.0393) | 0.1822***<br>(0.0387) | 0.1717***<br>(0.0416) |
| Financial socialization scale                                | 0.0946<br>(0.0755)    | 0.1531**<br>(0.0720)  | 0.1586**<br>(0.0731)  |
| Confident in meeting an unexpected expense w/o asking family |                       | 0.9484***<br>(0.1115) | 0.9448***<br>(0.1122) |
| Have credit card   |                       | 0.1451<br>(0.0951)    | 0.1348<br>(0.0962)    |
| Receive financial aid  |                       | 0.0271<br>(0.0958)    | 0.0131<br>(0.0979)    |
| Work during school year                                      |                       | 0.0971<br>(0.0987)    | 0.1088<br>(0.1023)    |
| Live in university housing                                   |                       | -0.0700<br>(0.0950)   | -0.0732<br>(0.1184)   |

|                                |           |           |           |
|--------------------------------|-----------|-----------|-----------|
| Responsible for paying bills   |           | 0.2933*** | 0.2931*** |
|                                |           | (0.1054)  | (0.1066)  |
| Participated in fin lit course |           | 0.0633    | 0.0588    |
|                                |           | (0.1005)  | (0.1015)  |
| Age                            |           |           | 0.0115    |
|                                |           |           | (0.0710)  |
| Male                           |           |           | 0.0046    |
|                                |           |           | (0.1054)  |
| Mother BA+                     |           |           | 0.0644    |
|                                |           |           | (0.1201)  |
| Father BA+                     |           |           | -0.2116*  |
|                                |           |           | (0.1217)  |
| GPA 3.1+                       |           |           | 0.1527    |
|                                |           |           | (0.1122)  |
| Constant                       | 2.3716*** | 1.7105*** | 1.4501    |
|                                | (0.2960)  | (0.3296)  | (1.4640)  |
| Observations                   | 870       | 829       | 827       |
| R <sup>2</sup>                 | 0.136     | 0.246     | 0.251     |

N=874 Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 6. Relationship between the FCS-Y and Measures of Financial Confidence and Behavior

Table 4 explores the relationships between FCS-Y scores and confidence in handling one's own financial future (columns 1 and 2) and obtaining a credit report (columns 3 and 4). Across all four columns, FCS-Y scores are positively related to these outcomes of interest. Each point increase in the FCS-Y is associated with a 17 point increase in financial confidence and a 4 point increase in obtaining a credit report (columns 1 and 3, respectively). Incorporating additional variables into columns 2 and 4 attenuates the magnitude of these effects, but the statistically significant association between the FCS-Y and the two outcomes holds.

**Table 4.** Regression Analysis of the Relationships between FCS-Y Scores, Confidence in Handling Own Financial Future, and Obtaining a Credit Report

|                            | (1)  | (2)  | (3)  | (4)  |
|----------------------------|--|--|--|--|
|                            | Confidence in ability to handle own financial future | Confidence in ability to handle own financial future | Obtained a copy of credit report in past 12 months | Obtained a copy of credit report in past 12 months |
| FCS-Y                      | 0.17***<br>(0.01)                                    | 0.11***<br>(0.02)                                    | 0.04***<br>(0.01)                                  | 0.036***<br>(0.01)                                 |
| Financial Well-Being Score |  | 0.01***<br>(0.00)                                    |  | 0.00<br>(0.00)                                     |
| Financial literacy         |  | 0.07***<br>(0.02)                                    |  | (0.00)<br>(0.01)                                   |
| Male                       |  | 0.26***<br>(0.04)                                    |  | (0.03)<br>(0.03)                                   |
| Mother has BA or above     |  | -0.04<br>(0.04)                                      |  | -0.69*<br>(0.04)                                   |

|  |         |         |        |         |
|--|---------|---------|--------|---------|
| Father has BA or above                                       |         | -0.07   |        | 0.04    |
|  |         | (0.05)  |        | (0.04)  |
| GPA 3.1+   |         | -0.05   |        | (0.02)  |
|  |         | (0.05)  |        | (0.04)  |
| Confident in meeting an unexpected expense w/o asking family |         | 0.07    |        |         |
|  |         | (0.05)  |        | (0.03)  |
| Have credit card   |         | 0.04    |        | 0.31*** |
|  |         | (0.04)  |        | (0.03)  |
| Receive financial aid  |         | -0.00   |        | (0.02)  |
|  |         | (0.04)  |        | (0.03)  |
| Work during school year                                      |         | -0.06   |        | 0.02    |
|  |         | (0.04)  |        | (0.03)  |
| Live in university housing                                   |         | -0.02   |        | (0.02)  |
|  |         | (0.05)  |        | (0.04)  |
| Responsible for paying bills                                 |         | 0.09*   |        | 0.061*  |
|  |         | (0.05)  |        | (0.04)  |
| Participated in fin lit course                               |         | 0.18*** |        | (0.01)  |
|  |         | (0.04)  |        | (0.03)  |
| Financial socialization                                      |         | 0.04    |        | (0.01)  |
|  |         | (0.03)  |        | (0.02)  |
| Age (18-22 in quarter year increments)                       |         | -0.02   |        | 0.01    |
|  |         | (0.03)  |        | (0.02)  |
| Constant   | 1.09*** | 0.68    | 0.03   | (0.19)  |
|  | (0.08)  | (0.63)  | (0.06) | (0.48)  |
| Observations   | 804     | 761     | 799    | 756     |
| R <sup>2</sup>   | 0.16    | 0.30    | 0.02   | 0.17    |

Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 7. Conclusion

Overall, the FCS-Y appears to be a valid scale that is appropriate for 18-22 year olds or other populations with emerging financial independence who work only part-time or have no income from work due to schooling.



## Appendix A: Copy of Student Survey

The UW-Madison Center for Financial Security is designing a set of questions to measure the effects of financial education programs for young adults. We ask that you help us in this research by completing a survey about money management. Your answers will help us to study young adults' financial well-being. The survey results will be used to determine which questions are most useful in measuring financial outcomes for young adults.

The survey takes less than 10 minutes, on average, to complete. The information we collect from the survey will remain private. Your responses will be combined with the responses of all other participants, and you will not be individually identified in any report prepared. You are free to withdraw from the study at any time and will not be penalized for choosing not to participate.

If you have questions, please contact Professor J. Michael Collins at the University of Wisconsin at 608-262-0369 or [jmcollins@wisc.edu](mailto:jmcollins@wisc.edu). If you have additional questions, you should contact the University of Wisconsin Educational Research Institutional Review Board (IRB) Office at 608-263-2320. The office staff can talk to you about your rights as a research participant.

If you complete this survey, you will have the chance to be entered into a lottery to receive an Amazon gift card valued at \$50. If you consent to participate in this survey, please click "next."  
Thank you for your time!

1. Do you currently have a personal budget, spending plan, or financial plan?

- Yes
- No

2. How confident are you in your ability to achieve a financial goal you set for yourself today?

- Not at all confident
- Somewhat confident
- Very confident

3. If you had an unexpected expense, how confident are you that you could come up with money to make ends meet within a few weeks from any source?

- Not at all confident
- Somewhat confident
- Very confident

4. If you had an unexpected expense, how confident are you that you could come up with money to make ends meet within a few weeks if you could not ask a family member or someone else for help?

- Not at all confident
- Somewhat confident
- Very confident

5. Do you regularly put money aside for a future use, such as paying bills, emergency savings, or a long-term financial goal?

- Yes
- No

6. Over the past month, would you say your spending on living expenses was less than your total income and/or available savings?

- Yes
- No

7. In the last 2 months, have you been charged a late fee on a bill?

- Yes
- No

8. How well does this statement describe you or your situation?

|  | Completely            | Very well             | Somewhat              | Very Little           | Not at all            |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Because of my money situation, I feel like I will never have the things I want in life | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am just getting by financially   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am concerned that the money I have or will save won't last                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

9. How often does this statement apply to you?

|  | Always                | Often                 | Sometimes             | Rarely                | Never                 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I have money left over at the end of the month | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| My finances control my life                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

10. Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- More than \$102
- Exactly \$102
- Less than \$102
- Don't know

11. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

- More than today
- Exactly the same
- Less than today
- Don't know

12. If interest rates rise, what will typically happen to bond prices?
- They will rise
  - They will fall
  - They will stay the same
  - There is no relationship between bond prices and the interest rate
  - Don't know

13. A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.
- True
  - False
  - Don't know

14. Buying a single company's stock usually provides a safer return than a stock mutual fund.
- True
  - False
  - Don't know

15. How often does each statement apply to you?

|  | Always                | Often                 | Sometimes             | Rarely                | Never                 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I have to ask my family and friends for money because I am short on funds. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can get good financial advice from my parents or another family member.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can get good financial advice from someone outside of my family.         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| When it comes to managing money, I look to my parent(s) as my role models. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

16. Were you taught about finances in any course, whether in high school, college, or in a nonacademic setting (i.e. religious institution, community organization/club)?
- Yes
  - No

17. How confident are you in your ability to handle your financial future (i.e. buying insurance, investing, etc.)?
- Not at all confident
  - Somewhat confident
  - Very confident

18. How interested are you in increasing your financial knowledge in the following areas:

|                             | Very Interested       | Somewhat Interested   | A Little Interested   | Not at All Interested |
|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Filing income taxes         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Managing credit cards       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Paying off student loans    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Selecting car insurance     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| IRA retirement accounts     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Homeownership and mortgages | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Health insurance            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Identity theft and fraud    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Credit reports and scores   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

19. Do you have a debit card?

- Yes
- No

20. Do you have a savings or investment account in your own name?

- Yes
- No

21. Do you have a credit card account entirely in your own name?

- Yes
- No

22. In the past 12 months, have you obtained a copy of your credit report?

- Yes
- No

23. How many hours do you work for pay in a typical week during the school year?

- 0
- 1-10 hours/week
- 11-20 hours/week
- 21-30 hours/week
- 31-40+ hours/week

24. Last month, were you responsible for paying any bills?

- Yes
- No

25. Does a parent/guardian pay any of your bills besides tuition and housing?

- Yes
- No

26. Do you currently live in UW housing during the school year?

- Yes
- No

27. Which of these best describes your major or anticipated field of study?

- Arts, Humanities or Languages
- Business or Communication
- Computer Sciences
- Education
- Engineering
- Mathematics or related
- Physical or Life Sciences
- Social Sciences
- Undecided
- Other

28. What is your current cumulative GPA?

- Below 2.0
- 2.1-2.5
- 2.6-3.0
- 3.1-3.5
- 3.6-4.0
- I don't have a GPA

29. Did you submit a Free Application for Federal Student Aid (FAFSA) for the current school year?

- Yes
- No
- Don't know

30. Do you receive any form of financial aid?

- Yes
- No
- Don't know

31. What is your gender?

- Male
- Female
- Other

32. What month were you born?

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

33. In what year were you born (yyyy)?

- Before 1994
- 1994
- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002

34. What is the highest level of education completed by your mother?

- High School or equivalent
- Some College or 2 year degree
- Bachelor's Degree or a 4-year college degree
- Master's Degree or Advanced Degree
- Don't know

35. What is the highest level of education completed by your father?

- High School or equivalent
- Some College or 2 year degree
- Bachelor's Degree or a 4-year college degree
- Master's Degree or Advanced Degree
- Don't know

## Appendix B: IRT and Factor Analysis of FCS-Y

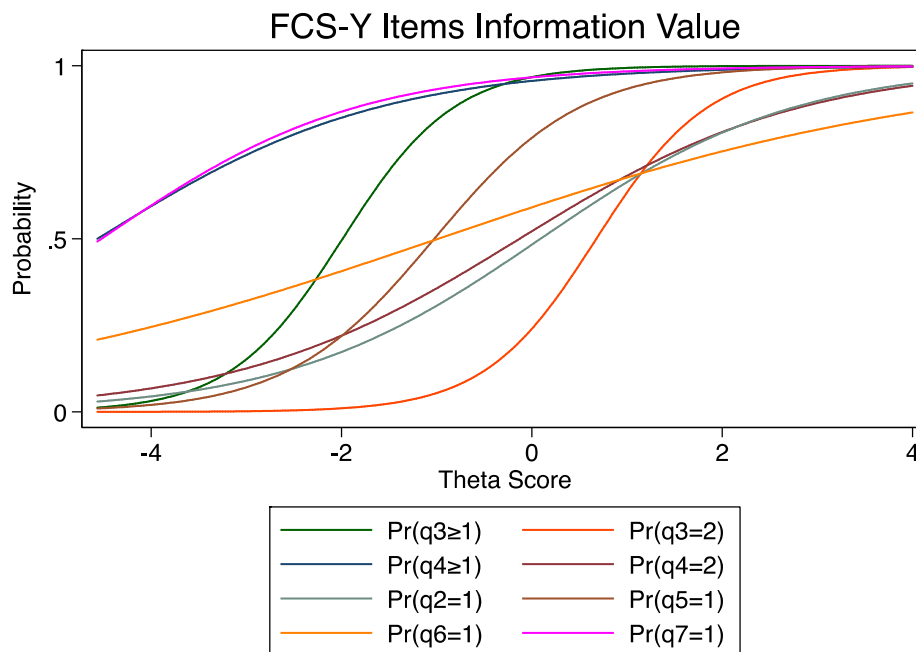
Although the FCS-Y is scored using classical test theory, it is useful to understand the contribution of each item to the overall score using Item Response Theory (IRT) methods. Based on a mixed model IRT with graded response for questions with a range of responses, Table B-1 shows each item's information value in terms of discrimination and difficulty. The value of each item for the overall scale is shown in Figure B-1. The factor loadings for each are shown in the Table B-2. Each question provides differing levels of information for the overall scale. Overall, the number of items appears to be relatively efficient.

**Table B-1.** Scale Item Information Value

|  | FCS-Y Theta        |
|--|--------------------|
| Q2. Do you currently have a personal budget. . . | 0.748***<br>-5.45  |
| Q3. How confident are you in your ability. . .   | 1.702***<br>-5.32  |
| Q4. If you had an unexpected expense. . .        | 0.676***<br>(5.69) |
| Q5. Do you regularly put money aside. . .        | 1.303***<br>(5.41) |
| Q6. Would you say your spending. . .             | 0.373***<br>(3.62) |
| Q7. Have you been charged a late fee. . .        | 0.744**<br>(2.97)  |

N=874. *t* statistics in parentheses \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Figure B-1.**



**Table B-2.** Rotated factor loadings (pattern matrix) and unique variances

| Variable                            | Factor1 | Factor2 | Factor3 | Uniqueness |
|-------------------------------------|---------|---------|---------|------------|
| Currently have a personal budget... | 0.3877  | -0.0182 | 0.0364  | 0.8481     |
| How confident are you in your...    | 0.4265  | 0.2309  | 0.0101  | 0.7647     |
| If you had an unexpected expense... | 0.1780  | 0.3535  | 0.0022  | 0.8433     |
| Do you regularly put money aside... | 0.4335  | 0.1053  | 0.0168  | 0.8007     |
| Would you say your spending...      | 0.1734  | 0.0702  | 0.0934  | 0.9563     |
| Have you been charged a late...     | 0.0860  | 0.2382  | 0.0707  | 0.9309     |