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Digital Financial Literacy and Financial Well-Being

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Appendix

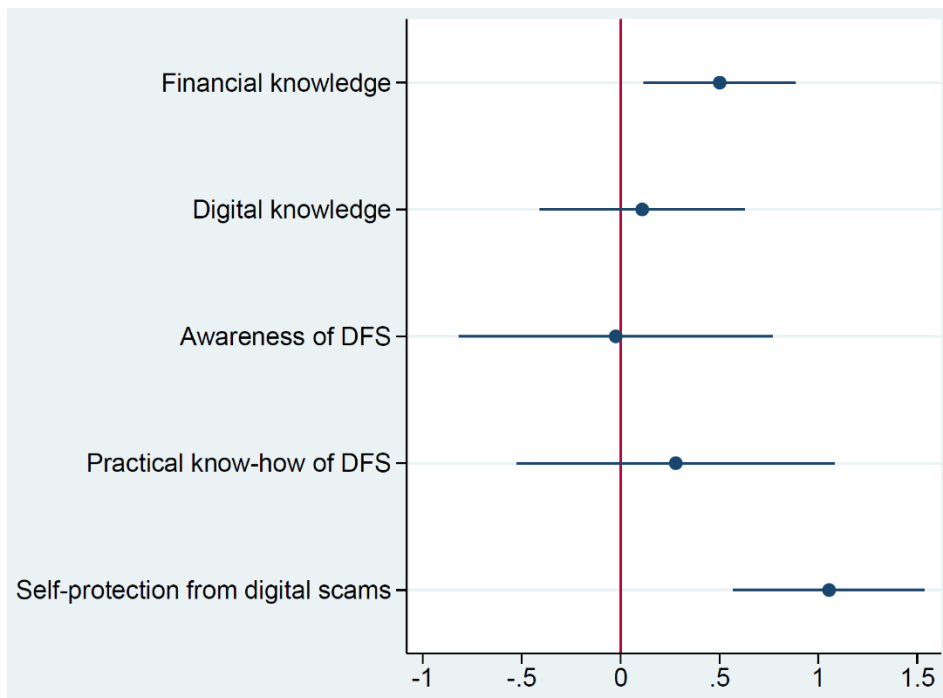


Figure A1. Coefficient estimates for subdimensions of digital financial literacy

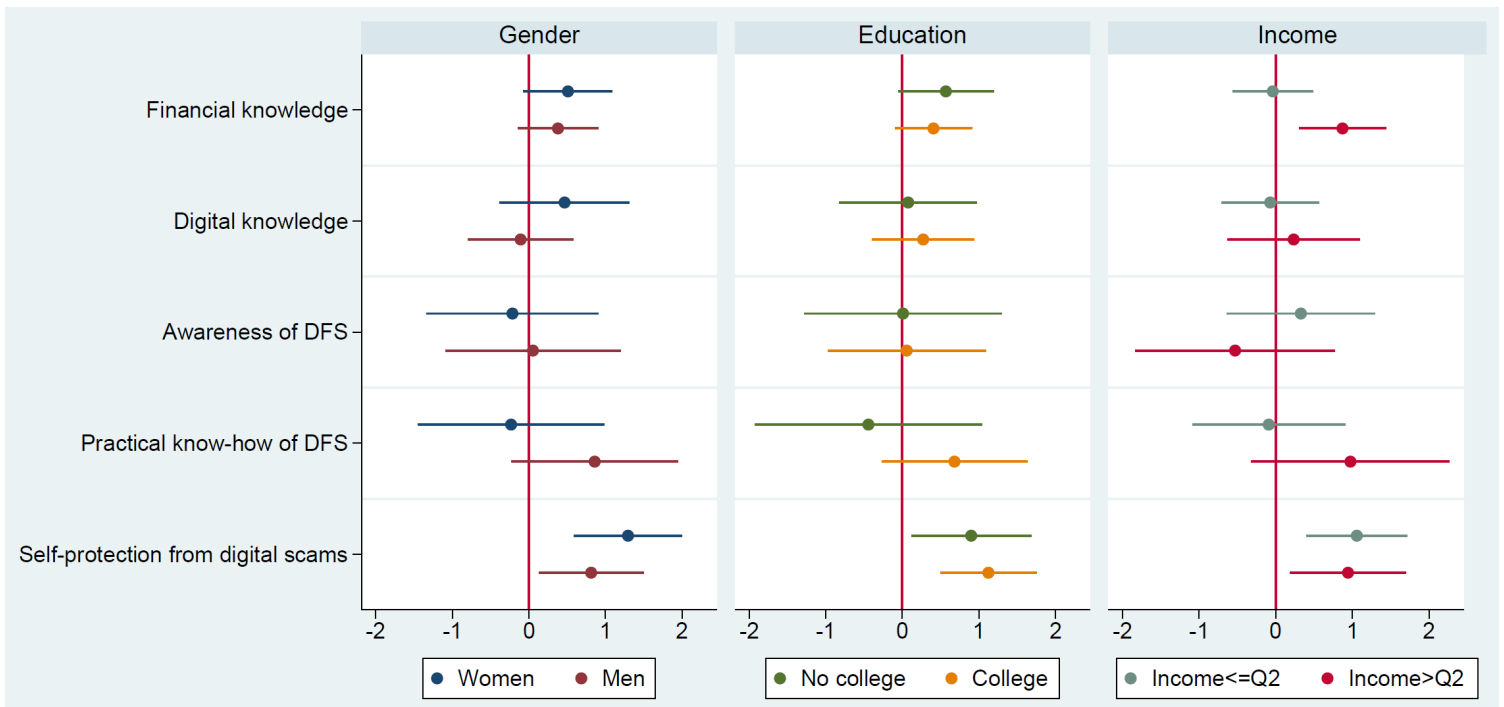


Figure A2. Subsample analysis by gender, education, and income

Table A1. CFPB financial well-being scale

Part 1. How well does this statement describe you or your situation?	
1. I could handle a major unexpected expense	0=not at all, 1=very little, 2=somewhat, 3=very well, 4=completely
2. I am securing my financial future	
3. Because of my money situation, I feel like I will never have the things I want in life*	
4. I can enjoy life because of the way I'm managing my money	
5. I am just getting by financially*	
6. I am concerned that the money I have or will save won't last*	
Part 2: How often does this statement apply to you?	
7. Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month*	0=never, 1=rarely, 2=sometimes, 3=often, 4=always
8. I have money left over at the end of the month	
9. I am behind with my finances*	
10. My finances control my life*	

Notes: Response fielded on 5-point Likert scale. * Items reverse coded.

Table A2. Questionnaires regarding digital financial literacy and financial knowledge

Digital knowledge*
I know how to turn on and off digital devices such as mobile phone, computer, and tablet
I know how to charge digital devices such as mobile phone, computer, and tablet
I know how to set up self-verification via text, messenger, or biometrics
I know how to unlock digital devices via biometrics function (e.g., fingerprint, facial recognition)
I know how to get WIFI access for digital devices
I know how to download and install application in computer or mobile phones
I know how to update application in mobile phones
I know how to create user account and manage it (e.g., change or reset password)
I know how to log into the website
I know how to change/manage privacy settings of the user account
Awareness of DFS*
I'm aware that banking services are offered online or via mobile phone
I'm aware that investment equities can be traded online or via mobile phone
I'm aware that I can borrow money online or via mobile phone
I'm aware that payments can be made online or via mobile phone
I understand the purpose and usage of online/mobile banking services
I understand the purpose and usage of online/mobile stock trading
I understand the purpose and usage of online/mobile lending services
I understand the purpose and usage of online/mobile payment services
Practical know-how of DFS*
I know how to open an account on DFS application or platform
I know how to set up self-verification for DFS (e.g., text, messenger, or biometrics)
I know how to navigate DFS application or platform
I know how to initiate and complete necessary financial services (e.g, remittances, stock trading, utility payment, borrowing application) via DFS application or platform
I know how to make payment using mobile payment services
I know how to cancel a transaction or order when an error occurs in DFS application or platform
I know how to contact customer service via DFS application or platform
Self-protection from digital scams*
I know how to avoid unnecessary fees for online/mobile financial transactions
I have the ability to screen out deceptive saving schemes or borrowing services online or via mobile application
I pay attention to keeping password for DFS safely
I change login and transaction credentials for DFS regularly
I know how to act when login/transaction credentials for DFS are leaked out
I tend to pass by an URL sent by an unknown financial institution
I regularly run malware detection program on computer or mobile phone
I have the ability to detect and avoid voice phishing
Financial knowledge
Imagine that you are given a gift of ₩1,000,000. If this amount of money will be deposited in an year, and the inflation rate remains at 3%, how much would you be able to buy with the money you receive in one year, as compared with receiving the same amount right now? (response: more than today; exactly the same; less than today; depends on the type of thing I want to buy; DK; RA)
You lend ₩100,000 to a friend one evening and he gives you ₩100,000 back the next day. How much interest has he paid on this loan? (response: () won; DK; RA)
Imagine that someone puts ₩1,000,000 into a <no fee, tax free> savings account with a guaranteed interest rate of 2% per year. They don't make any further payments into this account and they don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made? (response: () won; DK; RA)
and how much would be in the account at the end of five years [remembering there are no fees or tax deductions]? (response: more than ₩1,100,000; ₩1,100,000; less than ₩1,100,000; can't tell with the given information; DK; RA)
Investment with high returns comes with a relatively high risk (response: yes; no; DK; RA)
High inflation means the cost of living rises rapidly (response: yes; no; DK; RA)
In general, buying multiple stocks can help reduce exposure to investment risk (less chance of losing all the money if invest in multiple stocks) (response: yes; no; DK; RA)

Notes: DK, don't know; RA, refused to answer. *Response fielded on 5-point Likert scale.

Table A3. Associations between digital financial literacy and financial well-being, N=1615

	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	IV 2SLS (8)
Financial knowledge	0.730*** (0.184)					0.501** (0.196)		
Digital knowledge		0.873*** (0.173)				0.109 (0.265)		
Awareness of DFS			0.976*** (0.199)			-0.025 (0.404)		
Practical know-how of DFS				1.084*** (0.195)		0.279 (0.409)		
Self-protection from digital scams					1.306*** (0.208)	1.054*** (0.247)		
Digital financial literacy							1.330*** (0.193)	3.542** (1.700)
Age	0.026 (0.024)	0.051** (0.024)	0.051** (0.024)	0.058** (0.024)	0.046* (0.024)	0.051** (0.024)	0.051** (0.024)	0.089** (0.038)
Female	1.381*** (0.383)	1.258*** (0.382)	1.268*** (0.381)	1.243*** (0.381)	1.440*** (0.381)	1.476*** (0.382)	1.401*** (0.379)	1.621*** (0.436)
Vocational college graduate	-0.039 (0.655)	-0.031 (0.659)	-0.094 (0.658)	-0.016 (0.659)	-0.045 (0.655)	-0.165 (0.653)	-0.199 (0.656)	-0.719 (0.814)
4-year college graduate	2.179*** (0.522)	2.283*** (0.526)	2.199*** (0.525)	2.250*** (0.525)	2.135*** (0.523)	1.930*** (0.526)	1.939*** (0.525)	1.062 (0.893)
Post graduate degree	3.565*** (0.776)	3.480*** (0.768)	3.403*** (0.770)	3.454*** (0.769)	3.393*** (0.772)	3.118*** (0.776)	3.107*** (0.774)	1.810 (1.283)
Single	0.647 (0.533)	0.603 (0.530)	0.540 (0.529)	0.547 (0.528)	0.665 (0.526)	0.599 (0.526)	0.541 (0.527)	0.298 (0.567)
Separated, divorced, widowed	0.021 (0.894)	-0.171 (0.891)	-0.126 (0.886)	-0.119 (0.883)	0.128 (0.871)	-0.059 (0.872)	-0.218 (0.872)	-0.830 (0.983)
Household size	-0.431** (0.178)	-0.457** (0.177)	-0.418** (0.176)	-0.407** (0.176)	-0.404** (0.176)	-0.415** (0.177)	-0.432** (0.177)	-0.448** (0.185)
Household income	0.001 (0.001)	0.000 (0.001)	0.001 (0.000)	0.001 (0.000)	0.000 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Financial assets	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)
Any risky equity	2.074*** (0.488)	2.183*** (0.480)	1.800*** (0.491)	1.999*** (0.482)	2.122*** (0.472)	1.932*** (0.494)	1.806*** (0.484)	1.006 (0.765)
Poverty status	0.462 (1.362)	0.507 (1.379)	0.595 (1.396)	0.546 (1.371)	0.593 (1.361)	1.144 (1.424)	1.208 (1.423)	3.528 (2.503)
Long-term rental	-0.153 (0.508)	-0.173 (0.507)	-0.119 (0.509)	-0.109 (0.506)	-0.036 (0.504)	0.002 (0.504)	-0.050 (0.504)	0.226 (0.552)
Short-term rental	-1.696*** (0.508)	-1.748*** (0.506)	-1.655*** (0.504)	-1.639*** (0.504)	-1.586*** (0.500)	-1.591*** (0.502)	-1.649*** (0.503)	-1.554*** (0.528)
Urban	-0.328 (0.434)	-0.334 (0.433)	-0.391 (0.433)	-0.395 (0.432)	-0.432 (0.432)	-0.537 (0.431)	-0.516 (0.431)	-1.041* (0.591)
Kleibergen-Paap LM statistic ^a								22.52
Cragg-Donald Wald F statistic ^b								11.52

Notes: OLS, ordinary least squares; IV, instrumental variable; 2SLS, two-stage least squares; DFS, digital financial services. Robust standard errors in parentheses. Regressions control for province fixed effects. ^aKleibergen-Paap LM statistic for underidentification test. ^bCragg-Donald Wald F statistic for weak identification test. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

Table A4. Subsample analyses, N=1615

	Women	Men	Less than college	College graduate	HH income ≤ median	HH income > median
	(1)	(2)	(3)	(4)	(5)	(6)
Financial knowledge	0.511* (0.295)	0.380 (0.267)	0.569* (0.317)	0.407 (0.255)	-0.039 (0.267)	0.872*** (0.289)
Digital knowledge	0.466 (0.430)	-0.107 (0.351)	0.077 (0.457)	0.273 (0.341)	-0.072 (0.323)	0.234 (0.440)
Awareness of DFS	-0.214 (0.571)	0.053 (0.581)	0.010 (0.658)	0.058 (0.525)	0.328 (0.492)	-0.531 (0.662)
Practical know-how of DFS	-0.232 (0.619)	0.859 (0.552)	-0.443 (0.754)	0.680 (0.484)	-0.091 (0.508)	0.975 (0.659)
Self-protection from digital scams	1.295*** (0.359)	0.813** (0.347)	0.900** (0.398)	1.124*** (0.318)	1.058*** (0.334)	0.944** (0.386)
Age	0.072** (0.036)	0.032 (0.033)	0.004 (0.040)	0.072** (0.031)	0.046 (0.032)	0.070* (0.038)
Female			0.279 (0.665)	1.852*** (0.468)	1.112** (0.532)	1.987*** (0.545)
Vocational college graduate	-1.060 (0.943)	1.224 (0.905)			0.106 (0.820)	-0.213 (1.064)
4-year college graduate	2.314*** (0.759)	2.039*** (0.756)			2.208*** (0.696)	1.116 (0.819)
Post graduate degree	3.823*** (1.237)	2.929*** (1.000)			3.418*** (1.136)	2.244** (1.102)
Single	1.376* (0.772)	0.092 (0.728)	1.547* (0.886)	0.286 (0.662)	-0.846 (0.619)	-0.141 (0.829)
Separated, divorced, widowed	1.348 (1.176)	-1.332 (1.313)	1.318 (1.271)	-0.836 (1.195)	0.195 (1.007)	-0.239 (1.717)
Household size	-0.600** (0.254)	-0.278 (0.250)	-0.292 (0.304)	-0.528** (0.223)		
Household income	0.000 (0.000)	0.002* (0.001)	0.001 (0.001)	0.000 (0.001)	0.030* (0.016)	-0.000 (0.001)
Financial assets	0.001 (0.001)	0.003*** (0.001)	0.001** (0.001)	0.002** (0.001)	0.001** (0.000)	0.003*** (0.001)
Any risky equity	2.654*** (0.695)	1.321* (0.696)	1.736** (0.805)	2.151*** (0.640)	2.513*** (0.635)	0.973 (0.757)
Poverty status	-0.432 (2.392)	2.646** (1.215)	0.247 (1.805)	1.741 (2.054)	2.359 (1.482)	
Long-term rental	-0.081 (0.687)	0.099 (0.707)	-0.059 (0.991)	-0.119 (0.593)	-0.447 (0.666)	0.873 (0.700)
Short-term rental	-1.684** (0.731)	-1.299* (0.714)	-1.586** (0.799)	-1.532** (0.650)	-1.792*** (0.628)	0.460 (0.880)
Urban	-0.665 (0.652)	-0.385 (0.568)	-1.405* (0.783)	-0.114 (0.524)	-1.059* (0.589)	0.056 (0.618)
N	788	827	572	1043	808	807

Notes: DFS, digital financial services; N, number of observations. Robust standard errors in parentheses. Regressions control for province fixed effects. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.