

Yes, we know!

The Relationship between confidence in pension knowledge and retirement savings decisions

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Research Question

What drives retirement savings decisions: actual knowledge or confidence in knowledge?

Literacy and Financial Decision-Making

- financial literacy positively related to retirement saving and planning (Clark et al, 2006 [4]; Chan & Stevens, 2008 [3]; van Rooij et al., 2012[8])
- retirement planning and precautionary savings mostly driven by perceived literacy (measured by "Big 5") (Andersen et al, 2015 [1])

Confidence in Financial Decision-Making

- credit cards: extreme optimists do not pay off their debt (Puri & Robinson, 2007 [7])
- entrepreneurs: overconfident managers invest too much in projects with a negative NPV (Malmendier & Tate, 2005 [6])
- wealth accumulation & savings: highly-educated women's financial planning suffers from underconfidence, while financial planning of highly-educated men is improved by their overconfidence (Bannier & Neubert [2])
- confidence seems to be more important than literacy for long-term planning (Bannier & Neubert [2])

Dutch Pension System

1st Pillar:

State Pension

Dep.: Living in
NL

€ 1,075.56 /month, net

2nd Pillar:

Supplementary
Private
Pension

Dep.:
Employee

~70% avg. salary

3rd Pillar:

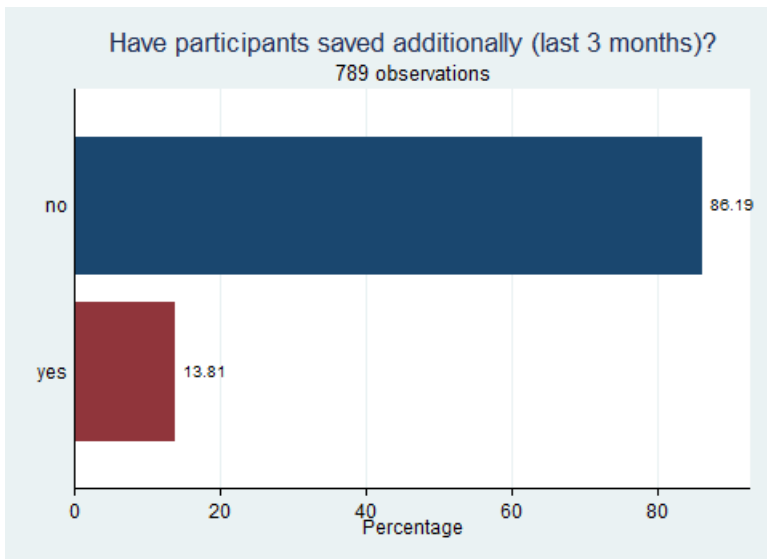
Voluntary
Private Savings

- survey on website of Pensioenfonds Detailhandel
- we measure specific pension knowledge, general financial literacy and confidence in knowledge
- 789 respondents

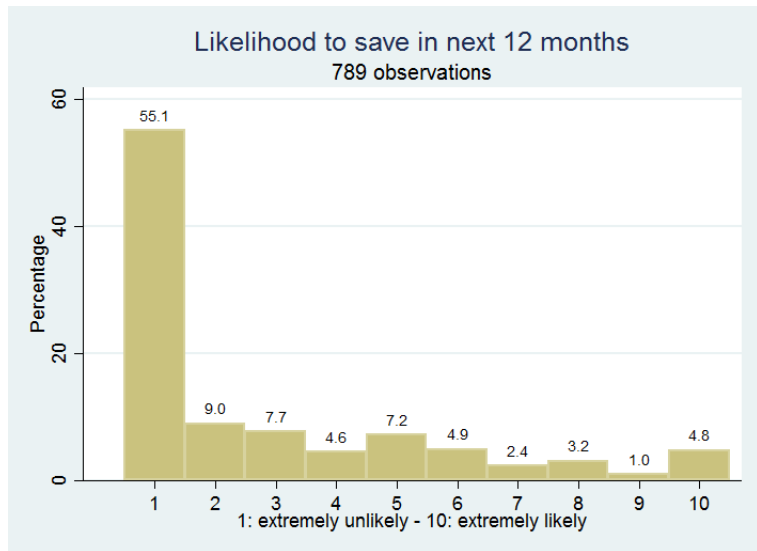
Table 1: Summary Statistics: whole BpFD population vs survey sample. Standard deviations in parentheses.

	Population	Survey Sample
Age	37.86 (13.16)	44.71 (14.09)
Part-time factor	0.662 (0.301)	0.689 (0.287)
Man	0.313 (0.464)	0.376 (0.485)
Gross Salary, wins. 1 %	18,151 (13,103)	21,965 (16,533)
N	245,712	789

Data (cont.)



Data (cont.)



Data: Perceived Pension Knowledge

Based on your points, do you think that you will be in the best or the worst half of all participants?

- Best half concerning pension knowledge
- Worst half concerning pension knowledge

The Quiz: Example Questions

1. If you stop working in the retail sector, you can take your accrued pension with you to another pension fund. 79.3%
2. It is possible to voluntarily build up additional pension money at Pensioenfonds Detailhandel. 76.4%
3. If you retire and have worked for 40 years, you will get approximately 70% of your final salary. 28.9%

The Quiz: Example Questions

4. What % of your salary do you pay as a contribution rate?

34.1%

- a) Nothing
- b) Something, but less than 7%
- c) Between 7% and 10%
- d) Between 10% and 17%
- e) More than 17%
- f) I do not know

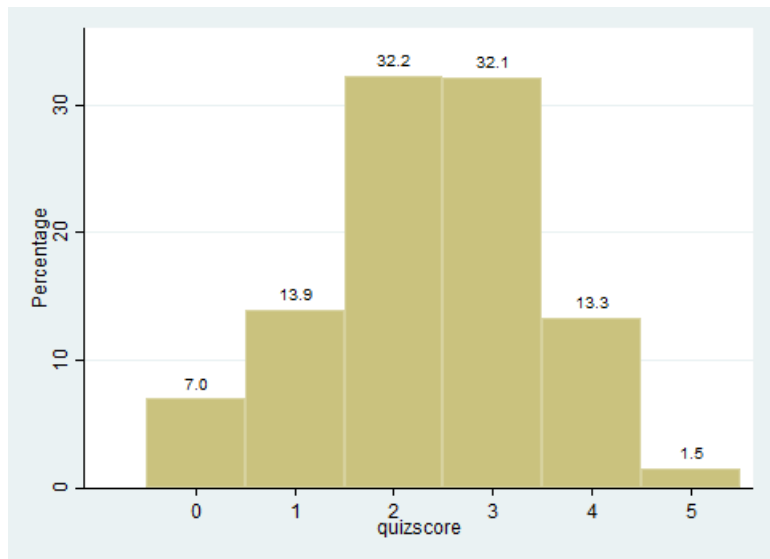
The Quiz: Example Questions

5. What % of your salary does your employer pay as a contribution rate?

16.6%

- a) Nothing
- b) Something, but less than 7%
- c) Between 7% and 10%
- d) Between 10% and 17%
- e) More than 17%
- f) I do not know

The Quiz- Distribution

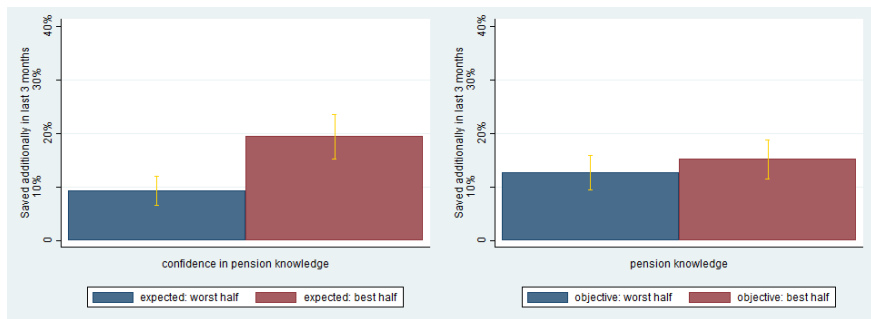


Descriptives: Confidence

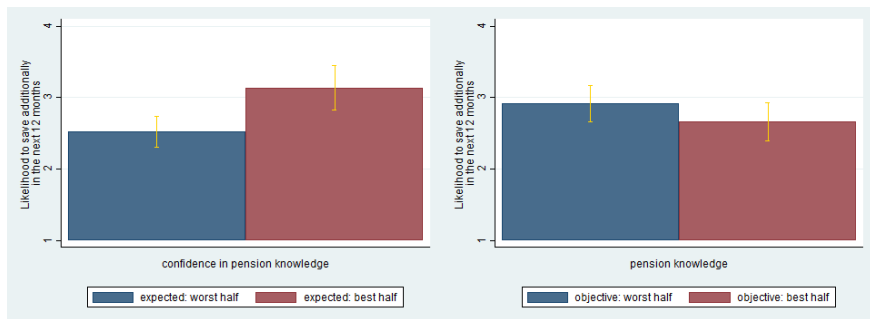
Table 2: Confidence and Actual Pension Knowledge. N=789

VARIABLES	Percentage
Expectation: Best Half	45.1
Objectively in Best Half	46.9
Underconfidence	20.0
Overconfidence	18.3
Well-Calibrated	61.7

Descriptive Results: Saving Behavior



Descriptive Results: Savings Intentions



Results: Saving Behavior (OLS regressions)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Exp. Half: Best		0.104*** (0.035)	0.081** (0.036)	0.073** (0.035)	0.076** (0.036)	0.081** (0.036)	0.082** (0.036)
Objective: Best		0.004 (0.034)	-0.007 (0.034)	-0.006 (0.034)	-0.011 (0.034)	-0.009 (0.034)	0.001 (0.034)
Exp.*Obj.		-0.0051 (0.050)	-0.002 (0.050)	0.001 (0.049)	0.003 (0.049)	0.003 (0.050)	-0.001 (0.050)
Age			0.002** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.003** (0.001)
Man			0.059** (0.025)	0.048* (0.025)	0.039 (0.025)	0.040 (0.026)	0.043* (0.026)
Risk Seek.				-0.003 (0.007)	-0.004 (0.007)	-0.005 (0.007)	-0.005 (0.007)
Patience				0.031*** (0.006)	0.031*** (0.006)	0.031*** (0.006)	0.029*** (0.006)
Financial Literacy	0.006 (0.017)					-0.014 (0.018)	-0.020 (0.018)
Constant	0.123*** (0.045)	0.091*** (0.021)	-0.014 (0.042)	-0.181*** (0.060)	-0.234*** (0.068)	-0.210*** (0.081)	-0.204** (0.084)
Observations	789	789	789	789	789	789	789
R-squared	0.000	0.021	0.035	0.065	0.089	0.093	0.113
Adjusted R-squared	-0.001	0.018	0.029	0.057	0.070	0.066	0.074
Education					YES	YES	YES
Salary						YES	YES
Debt & Wealth							YES

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Results: Savings Intentions (OLS)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Exp. Half: Best		0.780*** (0.269)	0.930*** (0.274)	0.813*** (0.266)	0.833*** (0.268)	0.880*** (0.271)	0.855*** (0.272)
Objective: Best		-0.353 (0.261)	-0.312 (0.261)	-0.310 (0.252)	-0.336 (0.254)	-0.281 (0.259)	-0.259 (0.259)
Exp.*Obj.		-0.143 (0.384)	-0.186 (0.382)	-0.147 (0.370)	-0.162 (0.372)	-0.192 (0.374)	-0.182 (0.374)
Age			-0.021*** (0.007)	-0.016** (0.007)	-0.013* (0.007)	-0.012 (0.008)	-0.012 (0.008)
Man			0.261 (0.193)	0.093 (0.189)	0.039 (0.190)	0.044 (0.194)	0.041 (0.196)
Risk Seek.				0.073 (0.049)	0.074 (0.049)	0.063 (0.049)	0.060 (0.049)
Patience				0.313*** (0.047)	0.308*** (0.047)	0.305*** (0.047)	0.292*** (0.047)
Financial Literacy	-0.245* (0.132)					-0.243* (0.136)	-0.240* (0.138)
Constant	3.414*** (0.345)	2.651*** (0.158)	3.416*** (0.321)	1.191*** (0.450)	0.886* (0.515)	1.462** (0.613)	1.337** (0.636)
Observations	789	789	789	789	789	789	789
R-squared	0.004	0.020	0.034	0.096	0.111	0.116	0.133
Adjusted R-squared	0.003	0.016	0.027	0.088	0.093	0.089	0.095
Education					YES	YES	YES
Salary						YES	YES
Debt & Wealth							YES

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

We find that:

- confidence in pension knowledge seems to have a larger impact on savings decisions than actual knowledge.
- context: Dutch retail sector, majority: lower-educated women
- direct measure of confidence, distinction between specific pension knowledge and general financial literacy

Discussion & Conclusion (cont.)

Things to consider:

- Hadar et al. (2013[5]): increasing objective knowledge might decrease subjective knowledge
- implications for policy makers: what kind of education *really* increases savings and retirement wealth?

Thank you!

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References

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App.: Gender & Confidence

	Female Freq (Percent)	Male Freq (Percent)
Correct Estimation: Best Half	111 (22.61%)	101 (33.89%)
Overconfidence	89 (18.13%)	55 (18.46%)
Correct Estimation: Worst Half	193 (39.31%)	82 (27.5% ²)
Underestimation	98 (19.96%)	60 (20.13%)
Total	491	298

App.: Data: Survey Descriptives

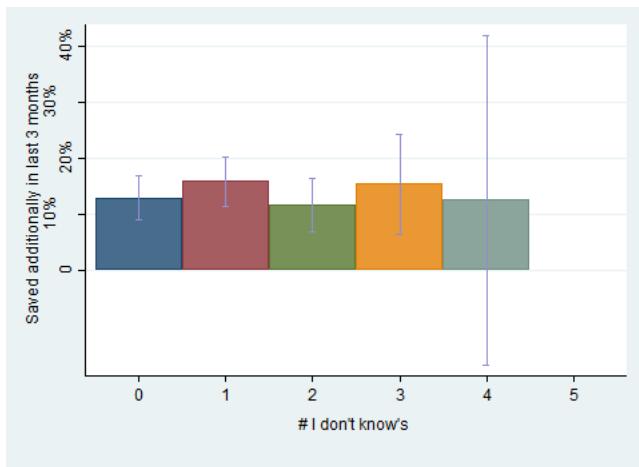
VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Man	789	0.378	0.485	0	1
#People in Household	789	2.572	1.254	1	12
Partner	789	0.711	0.454	0	1
Age	789	44.62	14.10	20	66
VMBO	789	0.269	0.444	0	1
HAVO	789	0.0786	0.269	0	1
VWO	789	0.0380	0.191	0	1
MBO1	789	0.0393	0.194	0	1
MBO2	789	0.0380	0.191	0	1
MBO3	789	0.0887	0.285	0	1
MBO4	789	0.200	0.400	0	1
HBO	789	0.166	0.372	0	1
WO	789	0.0494	0.217	0	1
No diploma	789	0.0279	0.165	0	1
Other diploma	789	0.00507	0.0711	0	1
Main Breadwinner	561	0.314	0.464	0	1
Partner earns same	561	0.125	0.331	0	1
Partner: main breadwinner	561	0.561	0.497	0	1

App.:Data: Descriptives

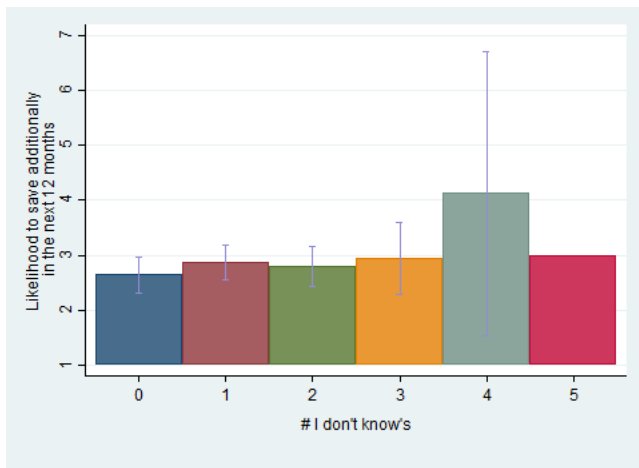
VARIABLES	N	Mean	St.Dev.	Min.	Max.
Correct: Stop working	789	0.793	0.405	0	1
Correct: voluntary contrib.	789	0.764	0.425	0	1
Correct: 70% replacement	789	0.289	0.454	0	1
Correct: employee's CR	789	0.341	0.474	0	1
Correct: employer's CR	789	0.166	0.372	0	1
Quiz score	789	2.354	1.133	0	5
Q1: Don't know	789	0.115	0.32	0	1
Q2: Don't know	789	0.185	0.389	0	1
Q3: Don't know	789	0.246	0.431	0	1
Q4: Don't know	789	0.293	0.455	0	1
Q5: Don't know	789	0.247	0.432	0	1

Table 3: Descriptives on the Quiz

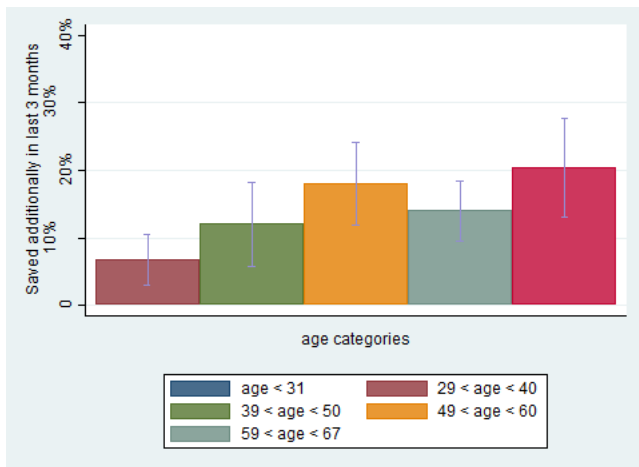
App.: Savings Behavior & "I don't know's"



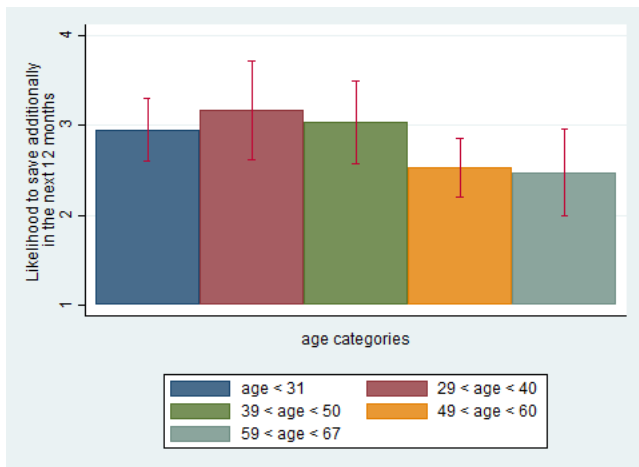
App.: Savings Intentions & "I don't know's"



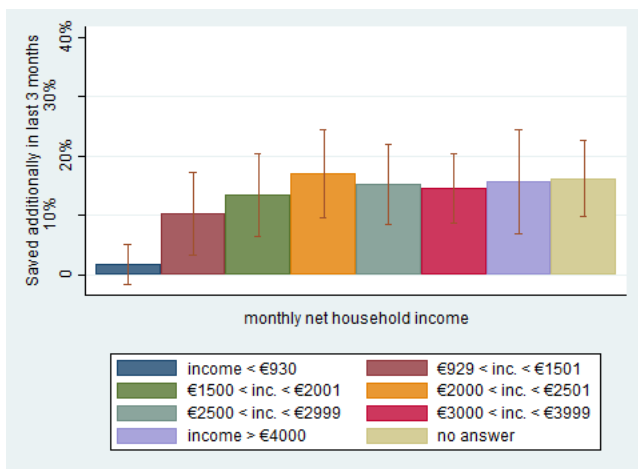
App: Savings Behavior & Age



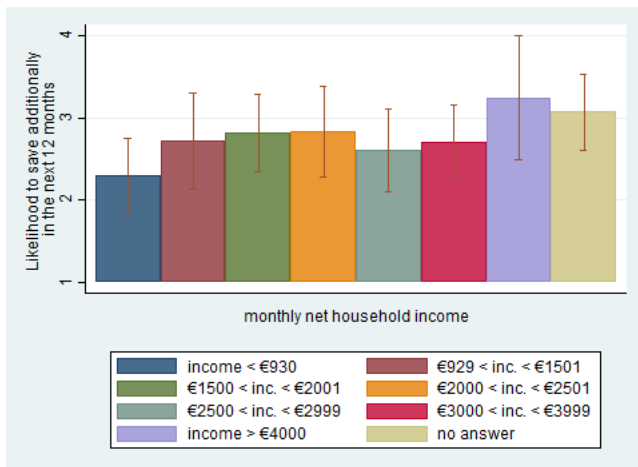
App.: Savings Intentions & Age



App.: Savings Behavior & Household Income



App.: Savings Intentions & Household Income



App.: Correlations

Gap	Sav. Beh.	Sav. Int.	Age	Exp. Half	Quiz Score	Real Salary	Time Pref.
Sav. Beh.	1						
Sav. Int.	0.4058*	1					
Age	0.1216*	-0.0772*	1				
Exp. Half	0.1463*	0.1158*	0.2732*	1			
Quiz Score	0.00800	-0.0441	0.1499*	0.2701*	1		
Real Salary	0.1691*	0.1656*	0.2055*	0.2098*	0.1684*	1	
Time pref.	0.1789*	0.2625*	-0.0607	0.0466	0.0187	0.1292*	1
Risk pref.	0.0249	0.1278*	-0.1246*	0.0429	0.0287	0.1344*	0.2416*
Goal Clarity	0.2099*	0.1351*	0.4872*	0.3322*	0.1126*	0.1937*	0.2667*
Enjoy ret.	0.0582	0.0204	0.0969*	0.0812*	-0.00150	0.1098*	0.1845*
Parttime Fact.	0.1283*	0.0741*	0.1113*	0.0436	0.0657	0.6486*	0.0351
Chance 70	0.0679	0.0629	0.0431	0.1273*	0.0243	0.0480	0.0259
Chance 80	0.0533	0.0920*	-0.0174	0.0993*	-0.0184	0.0279	0.0435
Chance 90	0.0533	0.0747*	-0.1014*	0.0399	-0.0529	-0.0122	0.0932*
Frugal	0.0843*	0.0704*	0.1015*	0.0772*	0.0456	-0.0474	0.0635
Exp. Ret. Age	-0.0633	-0.1196*	-0.1092*	-0.0556	0.00340	-0.00220	-0.0589
Exp. Ret. Inc.	0.0150	0.0215	-0.0476	0.0459	-0.0901*	0.2076*	0.0279

App.: Correlations (Cont.)

Gap	Risk pref.	Goal Clarity	Enjoy ret.	Parttime Fact.	Chance 70	Chance 80	Chance 90
Risk pref.	1						
Goal Clarity	0.0516	1					
Enjoy ret.	0.0534	0.4191*	1				
Parttime Fact.	0.0522	0.0844*	0.0832*	1			
Chance 70	-0.0198	0.0925*	0.1652*	-0.0482	1		
Chance 80	-0.000900	0.0716*	0.1360*	-0.0794*	0.8268*	1	
Chance 90	0.0860*	0.0441	0.1183*	-0.0811*	0.5588*	0.7727*	1
Frugal	-0.1509*	0.1774*	0.0200	-0.0719*	0.0335	0.00740	0.000300
Exp. Ret. Age	-0.0674	-0.1385*	-0.0600	0.0136	0.00840	0.00140	-0.0119
Exp. Ret. Inc.	0.0581	-0.00780	0.0963*	0.3043*	0.1274*	0.1116*	0.1000*
Gap	Frugal	Exp. Ret. Age	Exp. ret. inc.				
Frugal	1						
Exp. Ret. age	0.0283	1					
Exp. Ret. Inc.	-0.0807*	-0.0711*	1				

App.: Quiz Statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Expected Half: Pension Knowledge	789	0.451	0.498	0	1
Take Pension With You	789	0.793	0.405	0	1
Voluntary Build-Up	789	0.764	0.425	0	1
Final Salary	789	0.289	0.454	0	1
Employee's CR	789	0.341	0.474	0	1
Employer's CR	789	0.166	0.372	0	1
Quizscore	789	2.354	1.133	0	5
Objective Half: Pension Knowledge	789	0.469	0.499	0	1
Underconfidence	789	0.200	0.400	0	1
Overconfidence	789	0.183	0.387	0	1
Financial Literacy Score	789	2.510	0.708	0	3
