Yes, we know!
The Relationship between confidence in pension knowledge and retirement savings decisions

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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

2nd Pillar:

Supplementary Private Pension

Dep.: Employee

3rd Pillar:

Voluntary Private Savings

€ 1,075.56 /month, net   ~70% avg. salary
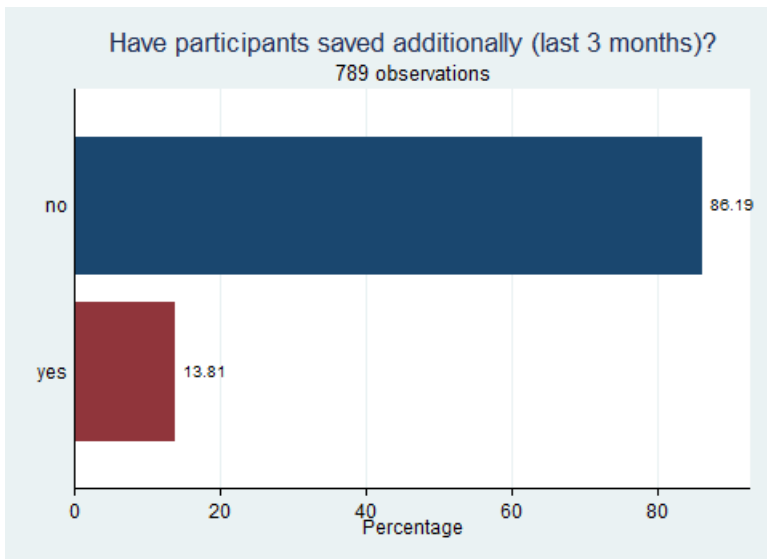
Data

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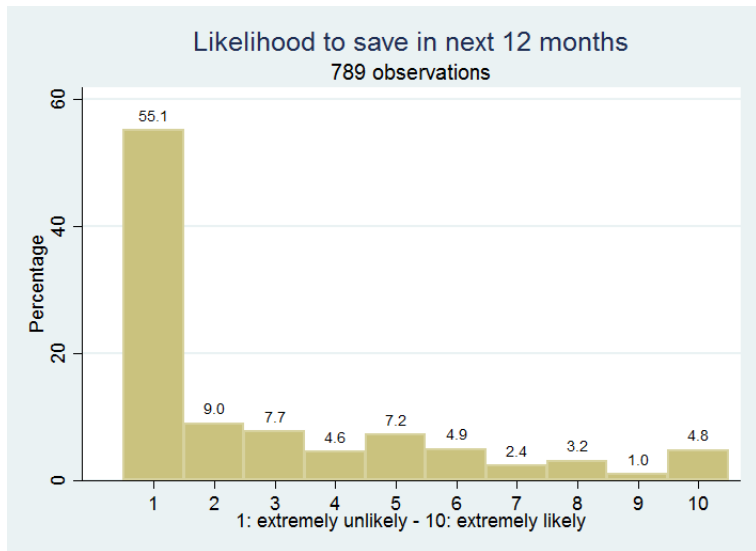- 789 respondents

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

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

Data (cont.)

Have participants saved additionally (last 3 months)?
789 observations

Data (cont.)

Likelihood to save in next 12 months
789 observations

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

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%`

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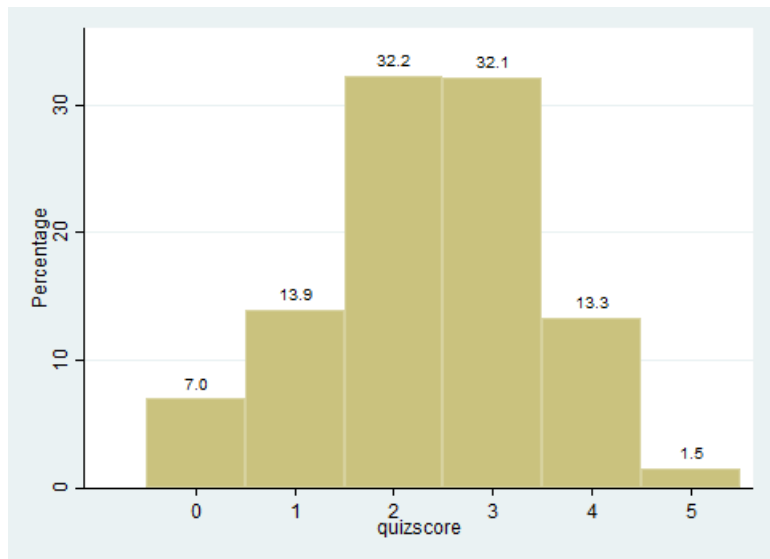
5. What % of your salary does your employer pay as a contribution rate?

16.6%

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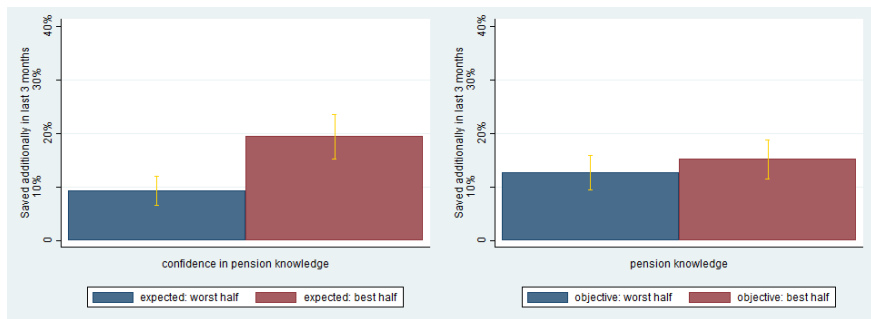e) More than 17%
f) I do not know

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
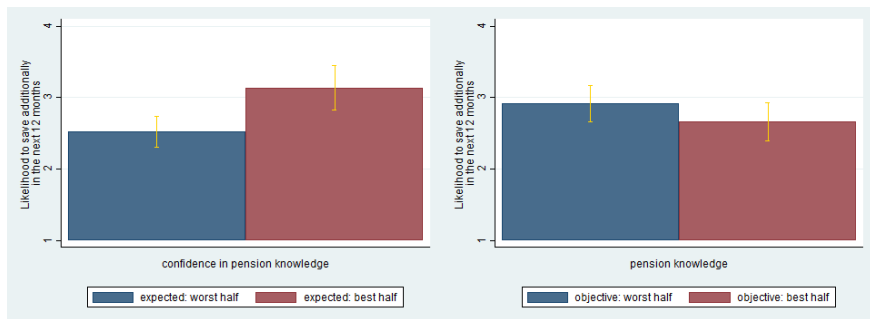
Results: Saving Behavior (OLS regressions)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Exp. Half: Best		0.104***	0.081**	0.073**	0.076**	0.081**	0.082**
		(0.035)	(0.035)	(0.035)	(0.036)	(0.036)	(0.036)
Objective: Best		0.004	-0.007	-0.006	-0.011	-0.009	0.001
		(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Exp.*Obj.		-0.0051	-0.002	0.001	0.003	0.003	-0.001
		(0.050)	(0.050)	(0.049)	(0.049)	(0.050)	(0.050)
Age				0.002**	0.003***	0.003***	0.003***	0.003**
				(0.001)	(0.001)	(0.001)	(0.001)
Man				0.059**	0.048*	0.039	0.040	0.043*
				(0.025)	(0.025)	(0.025)	(0.026)	(0.026)
Risk Seek.					-0.003	-0.004	-0.005	-0.005
					(0.007)	(0.007)	(0.007)	(0.007)
Patience					0.031***	0.031***	0.031***	0.029***
					(0.006)	(0.006)	(0.006)	(0.006)
Financial Literacy	0.006						-0.014	-0.020
	(0.017)						(0.018)	(0.018)
Constant	0.123***	0.091***	-0.014	-0.181***	-0.234***	-0.210***	-0.204**
	(0.045)	(0.021)	(0.042)	(0.060)	(0.068)	(0.081)	(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***	0.930***	0.813***	0.833***	0.880***	0.855***
		(0.269)	(0.274)	(0.266)	(0.268)	(0.271)	(0.272)
Objective: Best		-0.353	-0.312	-0.310	-0.336	-0.281	-0.259
		(0.261)	(0.261)	(0.252)	(0.254)	(0.259)	(0.259)
Exp.*Obj.		-0.143	-0.186	-0.147	-0.162	-0.192	-0.182
		(0.384)	(0.382)	(0.370)	(0.372)	(0.374)	(0.374)
Age				-0.021***	-0.016**	-0.013*	-0.012	-0.012
				(0.007)	(0.007)	(0.007)	(0.008)	(0.008)
Man				0.261	0.093	0.039	0.044	0.041
				(0.193)	(0.189)	(0.190)	(0.194)	(0.196)
Risk Seek.					0.073	0.074	0.063	0.060
					(0.049)	(0.049)	(0.049)	(0.049)
Patience					0.313***	0.308***	0.305***	0.292***
					(0.047)	(0.047)	(0.047)	(0.047)
Financial Literacy	-0.245*						-0.243*	-0.240*
	(0.132)						(0.136)	(0.138)
Constant	3.414***	2.651***	3.416***	1.191***	0.886*	1.462**	1.337**
	(0.345)	(0.158)	(0.321)	(0.450)	(0.515)	(0.613)	(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

<u>We find that:</u>

- 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

<u>Things to consider:</u>

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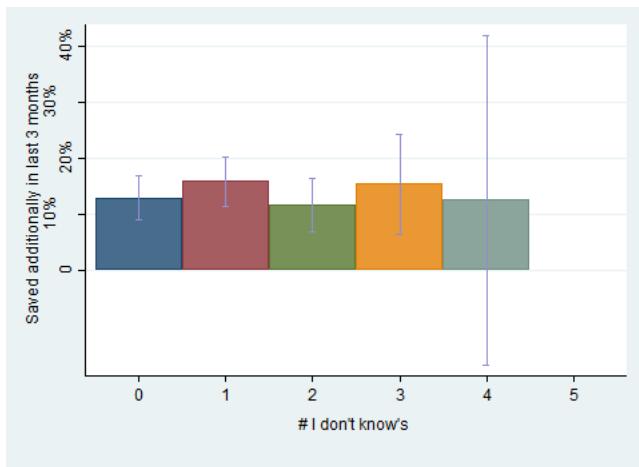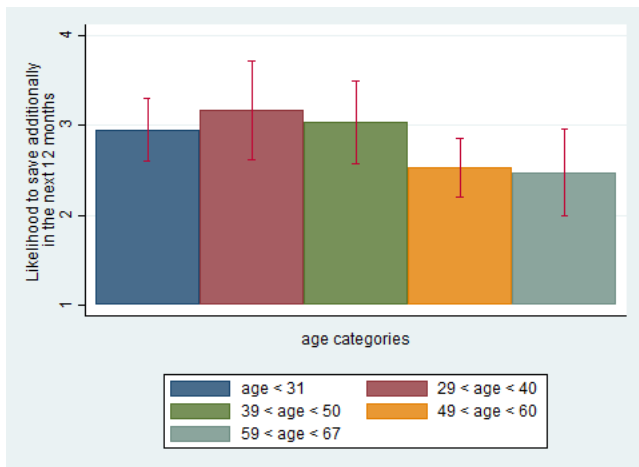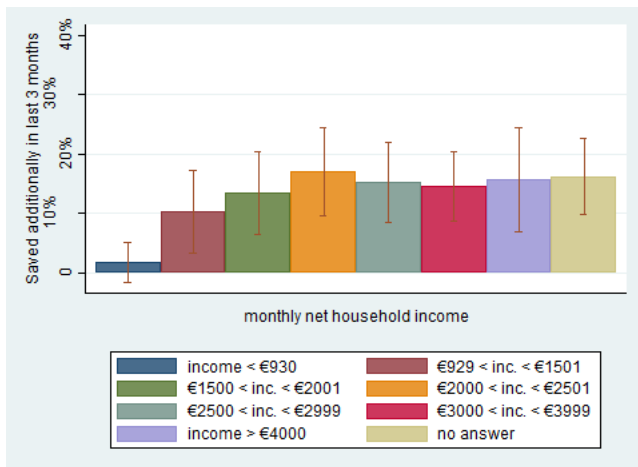
App.: Savings Intentions & "I don't know's"
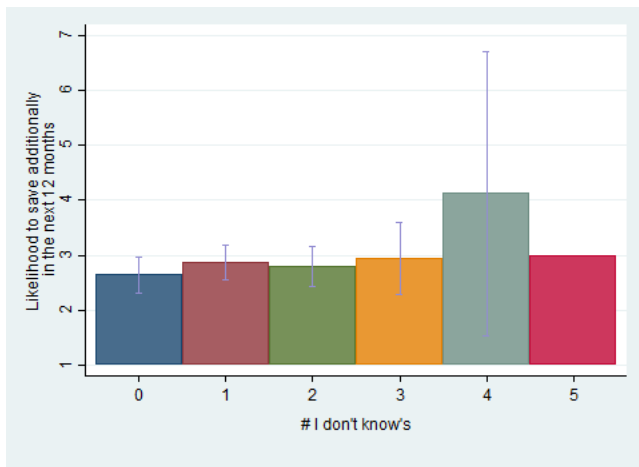
App: Savings Behavior & Age
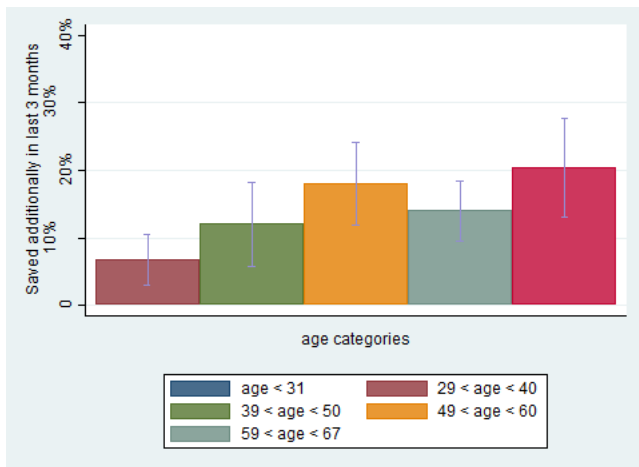
App.: Savings Intentions & Age

App.: Savings Behavior & Household Income
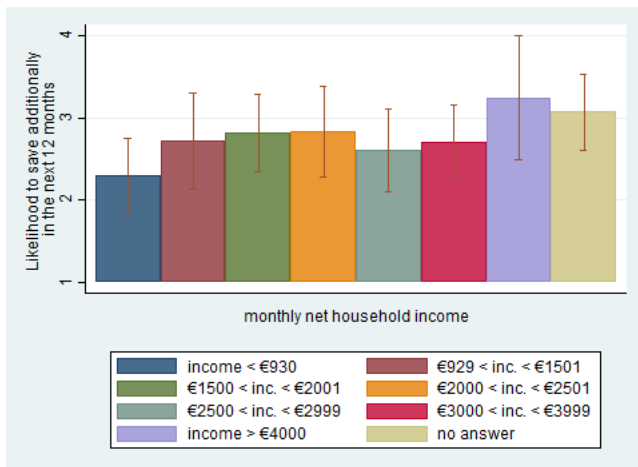
App.: Correlations

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