

Boosting women: Why they decline to provide responses to financial literacy questions

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Abstract

It is a staggering statistic that half of the population consistently outperform the remainder when it comes to financial literacy. But could the measurement tools have inherent gender bias? This study investigates the reasons for selecting the non-response option in financial literacy questions, including numerical self-efficacy, risk aversion, overconfidence and socio-economic status. Our analysis finds overwhelming evidence that females avoid answering these financial literacy questions, and we infer that having an interest in money matters at school age is a potential pathway for effective intervention. These results are important for shaping policy and providing resources that close the gap.

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Introduction

Financial education is recognised as a core component of the financial empowerment of individuals and the overall stability of the financial system (OECD, 2017). Measuring financial literacy aptitude is important for benchmarking progress to better inform strategies for financial education. Great need persists worldwide to enhance responses. A large survey of adult financial literacy in OECD countries shows that on average, fewer than half of adults (48%) could answer 70% of the financial knowledge questions correctly, or in other words, meet the minimum target score (OECD, 2017). Respondents need help understanding diversification and compounding interest, as 40 percent of people did not understand diversification and only 27 percent of respondents were able to both calculate simple interest and recognise the additional benefit of compounding over five years. These two concepts are essential for people to recognise the consequences of financial decisions such as only paying the minimum repayment on credit cards and saving for financial security in retirement.

Furthermore, the difference between the percentage of men and women achieving the minimum target score for financial knowledge in G20 countries stands at 11 percentage points, with men significantly more likely to achieve this score than women in all but three of the countries with comparable data (China, Indonesia and the Russian Federation). This finding is consistent across many studies, with reasons for the disparity pointing largely pointing to different men and women having a different level of interest in money (Lusardi et al., 2010). Emerging research, however, finds that boys and girls are treated differently by their parents in regard to money conversations which has a long-lasting effect (Agnew & Cameron-Agnew, 2015). Clearly, financial education must be designed to consider the significant differences in knowledge across men and women. Identifying different pathways to financial knowledge acquisition is vitally important for financial education to be effective.

This study recognises widespread gender differences in financial literacy but takes a closer look at gender differences in the measurement tools. Accordingly, we offer insight as to why females may score lower on financial literacy question sets, particularly if the question set is multiple choice and provides an 'unsure' option. There is a growing body of literature that identifies different factors that lead to a gender difference in the decision to skip a question (Charness & Gneezy, 2012). Particularly in regard to mathematical tasks, evidence is provided by Niederle and Vesterlund (2010) that females tend to have a higher number of skipped questions in a multiple-choice test, especially when the task is competitive. Thus, women display some risk-aversion when avoiding answering a question if they are not sure and will lose points or other incentive (Charness & Gneezy, 2012). Further, males demonstrate overconfidence than females in tasks where males stereotypically have advantage, like numeracy (Charness & Gneezy, 2012).

The novel contribution of this study is to investigate the gender bias in one set of questions that measures financial literacy performance. In particular, we study the non-response option as the decision science and education literatures identify that females tend to pick this option and males do not. We regress purported determinants of non-response, such as gender, numerical ability, risk aversion, overconfidence and socio-economic status on the binary non-response for each of the three financial literacy questions, and a sum of non-responses. We find that there is a large gender effect, that is, that females chose the non-response more often than men, and urge researchers to consider the formulation of questions.

This paper is structured as follows. Section 2 briefly reviews the literature. Section 3 explains the empirical methodology and the data employed in the analysis. Section 4 presents the results and a discussion of the findings.

Literature Review

Research with an interest in financial literacy is growing, investigating various relationships such as that with financial socialisation, economic empowerment, consumption behaviour, entrepreneurship, and attitudes to money, to name a few. This literature review provides a summary of findings relating to gender differences.

In adulthood many studies report sizeable gender differences in financial literacy scores (Lusardi et al., 2010). For example, Zissimopoulos, Karney, and Rauer (2008) found that less than 20% of middle-aged college-educated women were able to answer a basic compound interest question compared to about 35% of college-educated males of the same age. Gender gaps in financial literacy exist for a variety of demographic and socioeconomic groups, including teenagers (Bottazzi & Lusardi, 2016), university students (Gerrans & Heaney, 2016) and migrants (Karunaratne & Gibson, 2014). Gender gaps may also be related to low levels of education, income, wealth and health, as these are also other indicators of poor financial literacy (West & Worthington, 2018).

Many other studies have similar findings. Chen and Volpe (2002), for example, found that women were less financially knowledgeable than men and that this difference was statistically significant even after controlling for other variables. The study also found that women score lower because they either do not know basic facts, terminology, or concept of personal finance or they do not perform well in mathematics related questions. Men's feelings toward the importance of personal finance were stronger than that of women.

Similar explanations are given across studies. For example, Goldsmith and Goldsmith (1997) suggest that women have lower scores than men because women, in general, are less interested in the topics of 'Investments' and 'Personal Finances'. They find that people's financial literacy is related to their self-perception of their knowledge in personal finance. Men have higher self-perceived

education of investments than women and men are found more knowledgeable than women.

Gerrans, Speelman and Campitelli (2014) investigates the link between financial literacy and financial wellbeing and finds that financial knowledge drives good financial behaviour in men and financial satisfaction, but for females, this link is not evident. Instead, financial status has a strong impact on financial satisfaction. West and de Zwaan (2020) also identify differing financial socialisation pathways to building financial literacy in men and women, with higher levels of financial literacy in women linked to more frequent conversations in the home about money growing up.

This brief review provides insight into the challenge in front of policymakers and educators that seek to improve overall financial literacy, when barriers exist for half of the population. This study does not downplay the importance of addressing this need by accusing measurement tools of being inaccurate, but rather seeks to focus attention on the unique role gender plays in the field of financial knowledge, capability, and wellbeing. By doing so, we hope that gender is a key consideration in the formulation of measurement and analysis of financial literacy.

Conceptual Framework

While a variety of financial literacy measures have emerged in recent years³, the 'big three' questions initially designed by Annamaria Lusardi and Olivia S. Mitchell persist. The first question is designed to measure the capacity to do a simple calculation, the second question measures an understanding of inflation, and the third question gauges knowledge of risk diversification:

1. 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

³ See for example Knoll & Houts, 2012

Do not know

Refuse to answer

2. 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

Do not know

Refuse to answer

3. Please tell me whether this statement is true or false. 'Buying a single company's stock usually provides a safer return than a stock mutual fund'.

True

False

Do not know

Criticisms of the questions include the reliance on self-assessment, the potential to guess the answers at random, misunderstanding the question (especially if data is collected via phone interview), and sensitivity to question framing (Worthington, 2013; Lusardi & Mitchell, 2009). As with all data collection, these criticisms need to be considered when interpreting results. We propose that there is a further important factor to consider and draw from the decision sciences literature. This literature is building evidence that females and males are distinctly different (in aggregate) in their approach to decision-making under uncertainty, such as presented in multiple choice questions. Multiple choice testing has been found to favour males over females in the education literature as well, where research finds that females are more willing to skip questions or choose the non-response option (Tannenbaum, 2012).

The decision science research use experiments or competitions to assess gender differences in question responses. Research finds the stake of the result affects performance significantly for women, such as high stakes university entrance exams. This may be because females dislike high-pressure situations or competitive settings, especially in mathematical tasks (Niederle & Vesterlund, 2007; 2010). For example, Pekkarin (2015) found that women were less likely than men in Finland to gain entry to university because in the entrance exam women skipped more questions than optimal to maximise the probability of acceptance. Baldiga (2014) also found that when a penalty was imposed for wrong answers, women answered fewer questions than men, even after controlling for knowledge of the material, levels of confidence, and risk preferences. Espinosa and Gardeazabal (2013) conducted a field experiment by switching the incentive to providing a reward for skipping questions. They found that this increased the number of omissions, but mostly by females. Even with the incentive to provide a non-response, males tend to provide an answer.

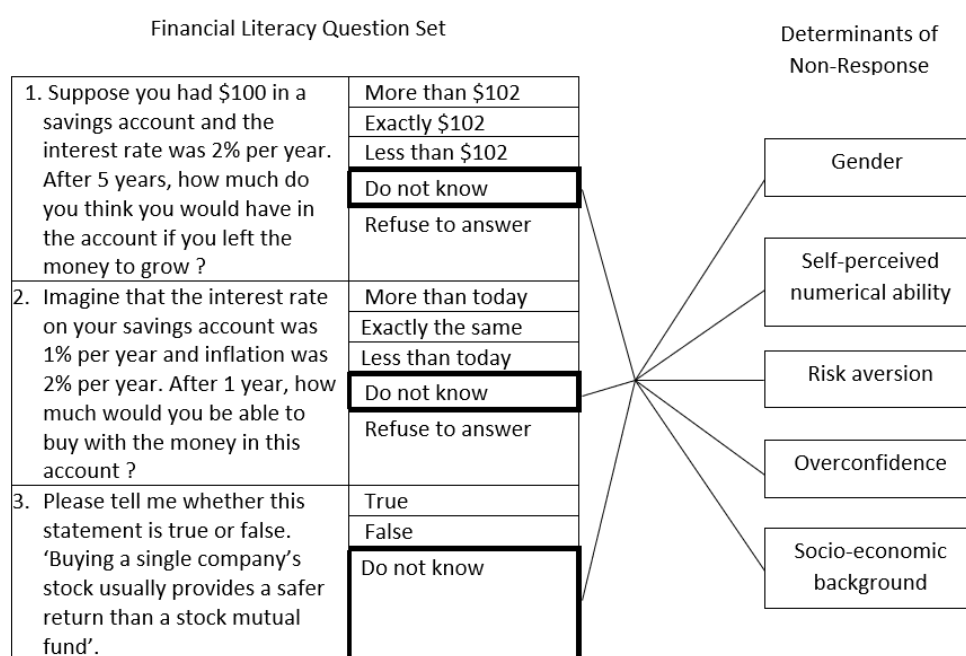
Further evidence of females behaving differently in high stakes tasks is provided by the risk aversion literature, where females are consistently more risk averse than males (West & Worthington, 2013; 2014). If answering questions at random risks losing an incentive or points, individuals can avoid this risk by skipping questions (Croson & Gneezy, 2009; Charness & Gneezy, 2012).

Confidence is another factor. Males have been found to be more overconfident than women in male-specific tasks, like numeracy (Barber & Odean, 2001). This relates to fulfilling stereotype expectations, as individual's (conditional on ability) are less willing to contribute ideas in areas that are stereotypically outside of their gender's domain (Coffman, 2014). This behaviour is found in school age children. Boys are shown to outperform girls when facing novel problems presented in standardised tests and girls are more confident answering questions about familiar material (Kimball, 1989; Loewen, Rosser & Katzman, 1988). Reiner and Wagner (2017) found that girls are

underconfident and underestimate their ability to provide the correct answer, and this is consistent with the stereotype threat.

Finally, there is limited evidence that socio-economic status is significantly linked to decision-making behaviour, but Reiner and Wagner (2017) found a small indication that it was. In their experiment involving a standardised test in schools, they found that pupils in vocational schools answer questions according to the automatic System 1 while pupils in high schools seem to answer according to the effortful System 2, where System 1 and 2 is the Kahneman (2003) dual model of thinking.

Synthesis of the decision science evidence directs our investigative attention to including factors relating self-perceived numeracy ability (Niederle & Vesterlund, 2007), risk aversion (Charness & Gneezy, 2012), overconfidence (Barber & Odean, 2001; Coffman, 2014), and socio-economic background (Reiner & Wagner, 2017) in a model of financial literacy non-response:



Methodology

This study employs data from a survey of 420 students from an Australian university in 2019. We use a monetary prize draw to incentivise and increase participation (Yu et al., 2017). The final sample consists of 266 respondents after screening for full responses. The descriptive statistics of the respondents shown in Table 1 an overweight to females (74 per cent), being 23 years old or younger and earning less than \$19,999 per annum. Because of these respondent characteristics, generalisation of the results is limited.

<insert Table 1 here>

The financial literacy questions are presented in this survey so that answers collected are ‘yes’, ‘no’, ‘unsure’ and ‘prefer not to answer’, a slight variation to the Lusardi and Mitchell (2011) specification. ‘No’ is the correct answer for all three questions. We code the responses to ‘unsure’ as a binary variable and include this binary for answers to each financial literacy question (i.e. interest “unsure” is *INTUS*, inflation “unsure” is *INFUS* and diversification “unsure” is *DIVUNS*) and a total (*UNS*), which can take the form of 0 (no non-responses) to 3 (3 non-responses). We use proxies from the available survey questions to quantify the direction and magnitude of the effect of the hypothesised determinants of *UNS*. The decision-making literature highlights the importance of self-perceived ability in numerical tasks as a determining factor for non-response. We identify a proxy for this variable from the survey questions and take the opportunity to broaden the variable set, as the question asks for self-perceived ability in maths, reading, writing and financial knowledge. As a good level of financial literacy is known to be highly correlated with good literacy and numeracy, see include reading, writing and financial knowledge as factors that may explain non-responses to questions on financial literacy (OECD, 2020). Self-perceived ability (*NUM*) is proxied by the question below in regard to maths (*NUM*), reading (*READ*), writing (*WRIT*) and financial knowledge (*FIN*):

“Thinking about when you were in year 7 at school, how did you perform in the topics below compared to other children in your class?

Much better

Better

About the same

Worse

Much worse"

We recode a score of 1 through 5, with 5 indicating a high level of self-perceived ability for the responses. A proxy for socio-economic status (*SES*) is drawn from a similar question. This question is worded as:

"Again thinking about when you were in year 7 at school, on a scale of 1 to 10, with 10 being a high level of financial satisfaction, rate the level of household financial satisfaction as best you can at this time."

An alternative measure considered was postcode of current accommodation that can be linked to the Socio-Economic Indexes For Areas (SEIFA) index, but this indicator would likely not be representative of family socio-economic status as students often move to city areas to study. A risk aversion metric (*RISK*) is taken from a well-known question that appears in the HILDA Survey:

"Which of the following statements comes closest to describing the amount of financial risk that you are willing to take with your spare cash? That is, cash used for savings or investment.

I take substantial financial risks expecting to earn substantial returns

I take above-average financial risks expecting to earn above-average returns

I take average financial risks expecting average returns

I am not willing to take any financial risks

I never have any spare cash"

We recode a score of 1 through 5, where 5 indicates a high willingness to take risk. Finally, we use the following question to proxy for overconfidence (*CONF*):

"I am confident I can manage my finances.

Describes me completely

Describes me very well

Somewhat describes me

Describes me very little

Does not describe me at all

Not applicable”

We recode from 1 through 6, with 6 indicating a high level of confidence in managing finances.

The probit model fits a maximum likelihood model with a dichotomous dependent variable coded as 0/1, and is given as

$$Pr(y_j \neq 0 | x_j) = \varphi(x_j \beta) \quad (1)$$

where y_j is *UNS*, x_j is the set of predictor variables (*NUM*, *SES*, *RISK*, *CONF*) and φ is the standard cumulative normal. We report coefficients, robust standard errors and marginal effects.

Analysis

The financial literacy question set, coding of variables and descriptive statistics are provided in Table 2. The responses to the three financial literacy questions show that more respondents choose the correct answer for compound interest (71.9 per cent of women and 80 per cent of men), followed by inflation (42.3 per cent women and 65.7 per cent men) and diversification (29.1 per cent women and 58.6 per cent men). The percentage of wrong answers was higher for men for all three questions, with the highest percentage of wrong answers given for inflation (15.7 per cent of men and 14.8 per cent of women). Overall, we observe knowledge of the concept diversification is particularly lacking, followed closely by knowledge of inflation.

There is a marked difference in the male and female responses to “unsure”. Females chose the “unsure” option more frequently than males. For compound interest, the difference is over 10 percentage points, (16.8 per cent vs 5.7 percent), for inflation the difference is over 15 percentage points (37.2 per cent vs 15.7 per cent), and for diversification it is nearly 30 percentage points (60.2

per cent vs 31.4 per cent). It is evident that as the level of difficulty increased, females opted for the safest option, while males seem to avoid this option and pick an answer, even if it is wrong.

<insert Table 2 here>

The descriptive statistics for self-perceived numerical ability, risk aversion, overconfidence and socioeconomic background are provided in Table 3. Males report higher levels of ability in *NUM*, and *FIN*, while females report higher levels in *READ* and *WRIT*. The level of socio-economic status growing up as remembered by the respondent is about equal for males and females overall, with females reporting an average of 6.306 out of 10 and males reporting 6.386 out of 10. Males are much more willing to take financial risks (24.3 per cent of males report taking above-average risk compared to 6.1 per cent of females) and have more confidence than females with managing finances (31.4 per cent of males described completely with the statement as compared to 21.9 per cent of females).

<insert Table 3 here>

The probit model estimates, including coefficients, robust standard errors and levels of significance are reported in Table 4. The first model reported (1) is on the total number of *UNS* responses. This is followed by the “unsure” responses to each of the three financial literacy questions such as with regard to interest (*INTUNS*) (2), inflation (*INFUNS*) (3) and diversification (*DIVUNS*) (4). The Pseudo R² shows the best fit is for model (4), followed by (1), (3) and (2). The regressions show that being *FEM* is the overwhelmingly dominant characteristic for choosing “unsure”. The coefficients for *FEM* are significant at the 0.05 level or higher, and coefficients range from 0.510 to 0.706, indicating that if a non-response is recorded there is more than a 50 per cent chance the respondent is female.

Self-perceived ability with financial knowledge, *FIN*, is significant and negative in models (1), (3) and (4), increasing in magnitude in model (4). Thus, respondents that recalled having better financial knowledge than their peers at school were less likely to select a non-response answer to a financial

knowledge question. Hence, we infer, as other studies do, that having an early interest in money enables people to acquire and build knowledge, especially regarding the key concepts. Further to this point, *RISK* is significant only in model (4). Remembering that diversification was the most difficult question and required an understanding of managing risk through diversification, it makes sense that those who indicate a willingness to take risk are willing to select an answer response rather than a non-response. In this sample, the *RISK* parameter may proxy for both risk-taking knowledge and risk-taking behaviour, or it is hard to distinguish between the two.

Numerical ability is significant in model (2) with a negative coefficient. Respondents that had higher levels of self-perceived ability in mathematics were less likely to record an “unsure” response to the question with the least difficulty, interest. In this model for the “unsure” response to the interest question, only *FEM* and *NUM* were significant. In this model *NUM* seemed to be more related to “unsure” responses than *FIN*. Finally, *AGE* records a significant and negative relationship with *UNS* in model (1). Therefore, older people are less likely to record an “unsure” response.

<insert Table 4 here>

In summary, we make findings that are worth further exploration with larger data sets. There is no doubt that females are avoiding answering these financial literacy questions. This is worth further investigation with other research methods, like interviews and focus groups, to uncover the reasons behind female decision-making in response to this set of multiple-choice questions. This research can help formulate gender neutral financial literacy metrics. Or, if this is not possible due to the myriad of structural barriers to reduce gender bias, boosts to female financial literacy education are required by educators and policymakers.

We infer from the self-perception proxies that having interest in money matters at school age matters (and thinking that you are better than others), but that early confidence did not translate into current money confidence as the *CONF* parameter was not significant in any models. An

understanding of risk concepts or risk-taking behaviour was also important for selecting an answer and not a non-response option. What may be good news is that *SES* was not significant in this sample, with the proxy used. This is worth investigation with a larger data set, as lack of financial literacy is a likely contributor to widening wealth divides.

Discussion

In this study we take a closer look at how financial literacy is measured. We draw our hypothesis that females make more non-responses than males from the decision-science literature. We find that this is overwhelmingly the case in our sample. The most promising pathway to overcome such behaviour is having a confidence in financial knowledge at school age. Hence, more work is to be done to boost female confidence with money matters in school-age children. When interpreted in conjunction with literature on financial socialisation, this responsibility lies with parents as well as teachers, especially same sex parents (West & de Zwaan, 2020).

For researchers and educators, more work is to be done on understanding gender bias in financial literacy metrics. Perhaps open-ended questions would elicit more contextual understanding of knowledge about money matters by allowing more qualitative aspects of respondent's social experience, values, and cultural diversity to be included (Hunter & Sawatzki, 2019). Thus, a sophistication may exist that is not captured in tasks such as balancing budgets and caring for others including the broader society as seen in indigenous communities.

References

- Agnew, S., & Cameron-Agnew, T. (2015). The influence of consumer socialisation in the home on gender differences in financial literacy: Gender impact of financial socialisation in home. *International Journal of Consumer Studies*, 39(6), 630-638.
- Baldiga, K. (2014). Gender differences in willingness to guess. *Management Science*, 60(2), 434-448.
- Barber, B. & Odean, T. (2001). Boys will be boys: Gender, overconfidence and common stock investment. *The Quarterly Journal of Economics*, 116(1), 261-292.
- Bottazzi, L. & Lusardi, A. (2016). Gender differences in financial literacy: Evidence from PISA data in Italy. Available at <https://institute.eib.org/wp-content/uploads/2016/10/gender-diff.pdf>.
- Charness, G. & Gneezy, U. (2012). Strong evidence for gender differences in risk taking. *Journal of Economic Behavior & Organisation*, 83(1), 50-58.
- Chen, H., & Volpe, R. (2002). Gender differences in personal financial literacy among college students. *Financial Services Review*, 11, 289-307.
- Coffman, K.B. (2014). Evidence on self-stereotyping and the contribution of ideas. *The Quarterly Journal of Economics*, 129(4), 1625-1660.
- Croson, R. & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, 47(2), 448-474.
- Espinosa, M.P. & Gardeazabal, J. (2013). Do students behave rationally in multiple choice tests. *Journal of Mathematical Psychology*, 54(5), 415-425.
- Gerrans, P., Speelman, C. & Campitelli, G. (2014). The relationship between personal financial wellness and financial wellbeing: A structural equation modelling approach. *Journal of Family and Economic Issues*, 35, 145-160.
- Gerrans, P. & Heaney, R. (2016). The impact of undergraduate personal finance education on individual financial literacy, attitudes and intentions. *Accounting & Finance*, 59 (1), 177– 217. <https://doi-org.libraryproxy.griffith.edu.au/10.1111/acfi.12247>

- Goldsmith, R. E., Goldsmith, E. B. (1997). Gender differences in perceived and real knowledge of financial investments. *Psychological Reports*, 80(1), 236-238.
- Kahneman, D. (2003). A perspective on judgement and choice: mapping bounded rationality. *American Psychologist*, 58(9), 697.
- Karunaratne, W., & Gibson, J. (2014). Financial literacy and remittance behaviour of skilled and unskilled immigrant groups in Australia. *Journal of Asian Economics*, 30, 54– 62.
- Kimball, M. (1989). A new perspective on women's math achievement. *Psychological Bulletin*, 105(2), 198-214.
- Loewen, J., Rosser, P., & Katzman, J. (1988). Gender bias in SAT items. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Lusardi, A., Mitchell, O.S., & Curto, V. (2010). Financial literacy among the young. *Journal of Consumer Affairs* (44)2, 358-380.
- Lusardi, A., & Mitchell, O. S. (2009). How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness. National Bureau of Economic Research Working Paper 15350.
- Lusardi, A., & Mitchell, O.S. (2011). Financial literacy around the world: an overview. *Journal of Pension Economics and Finance*, 10(4), 497–508. Available at <https://doi.org/10.1017/S1474747211000448>.
- Niederle, M. & Vesterlund, L. (2007). Do women shy away from competition? Do men compete too much? *The Quarterly Journal of Economics*, 122(3), 1067-1101.
- Niederle, M., & Versterlund, L. (2010). Explaining the gender gap in math test scores: The role of competition. *The Journal of Economic Perspectives*, 24(2), 129-144.
- OECD. (2017). G20/OECD INFE Report on adult financial literacy in G20 countries. Report presented at the 2017 G20 Leader's Summit meeting in Hamburg on July 8, 2017. Available at <http://www.oecd.org/daf/fin/financial-education/G20-OECD-INFE-report-adult-financial-literacy-in-G20-countries.pdf>

- Pekkarinen, T. (2015). Gender differences in behaviour under competitive pressure: Evidence on omission patterns in university entrance examinations. *Journal of Economic Behavior & Organisation*, 115, 94-110.
- Riener, G., & Wagner, V. (2017). Shying away from demanding tasks? Experimental evidence on gender differences in answering multiple-choice questions, *Economics of Education Review*, 59, 43-62. Available at <https://doi.org/10.1016/j.econedurev.2017.06.005>.
- Tannenbaum, D. (2012). Do gender differences in risk aversion explain the gender gap in SAT scores? Uncovering risk attitudes and the test score gap. Unpublished paper, University of Chicago, Chicago.
- West, T. & de Zwaan, L. (2020). Financial socialisation of Australian university students: Differences in gender. *Consumer Interests Annual*, forthcoming.
- West, T. & Worthington, A.C. (2014). Personal attributes and financial risk-taking in Australia. *JASSA*, 25(1), 25-31.
- West, T. & Worthington, A.C. (2013). A canonical correlation analysis of financial risk-taking by Australian households. *Consumer Interests Annual*, 59, 1-4.
- West, T. & Worthington, A.C. (2018). Synthesizing an index of financial literacy using not-for-purpose survey data. *Economic Notes: Review of Banking, Finance and Monetary Economics*, 47 (2-3), 331-352.
- Worthington, A.C. (2013). Financial literacy and financial literacy programmes in Australia. *Journal of Financial Services Marketing*, 18, 227-240. Available at <http://doi.10.1057/fsm.2013.18>
- Yu, S., Alper, H.E., Nguyen, A., Brackbill, R.M., Turner, L., Walker, D.J., Maslow, C.B. & Zweig, K.C. (2017). The effectiveness of a monetary incentive on survey offer response rates and response completeness in a longitudinal study. *BMC Medical Research Methodology*, 17, 77-91.
- Zissimopoulos, J. M., Karney, B., & Rauer, A. (2008). Marital histories and economic well-being. Michigan Retirement Research Center Research Paper No. WP, 180.

Tables

Table 1. Descriptive statistics of sample

Parameter	Female			Male		
	Proportion of Total Sample	Mean	Standard Deviation	Proportion of Total Sample	Mean	Standard Deviation
AGE						
What age category are you in?	196	1.883	1.11	70	1.914	1.073
1- 23 or younger	0.500			0.443		
2- 24 to 29	0.250			0.314		
3- 30 to 39	0.158			0.171		
4- 40 to 49	0.056			0.043		
5- 50 to 59	0.031			0.014		
6- 60 or over	0.005			0.014		
INC						
What is your current annual income, including paid work, government benefits and other financial support?	196	2.663	1.525	70	2.457	1.847
0- Don't know/prefer not to answer	0.097			0.157		
1- \$0	0.056			0.086		
2- \$1- \$19,999	0.357			0.400		
3- \$20,000-\$39,999	0.255			0.143		
4- \$40,000-\$59,999	0.117			0.086		
5- \$60,000-\$79,999	0.061			0.029		
6- \$80,000-\$99,999	0.041			0.043		
7- Above \$100,000	0.015			0.057		

Table 2. Descriptive statistics of financial literacy questions

Financial Literacy Questions		Female	Male
COMPOUND INTEREST			
If you invested \$100 today and the interest rate was 2% per year your bank account balance after five years would be exactly \$102			
INTW	Yes	0.066	0.114
INTC	No	0.719	0.800
INTUNS	Unsure	0.168	0.057
INTP	Prefer not to answer	0.046	0.029
INFLATION			
After 1 year you would be able to buy more than today if you invested \$100 in your bank account today at an interest rate of 1% per year when inflation is 2% per year.			
INFW	Yes	0.148	0.157
INFC	No	0.423	0.657
INFUNS	Unsure	0.372	0.157
INFP	Prefer not to answer	0.056	0.029
DIVERSIFICATION			
Buying shares in a single company usually provides a safer return than buying units in a managed share fund.			
DIVW	Yes	0.056	0.100
DIVC	No	0.291	0.586
DIVUNS	Unsure	0.602	0.314
DIVP	Prefer not to answer	0.051	0.000
UNSURE (UNS)			
	0	0.321	0.571
	1	0.327	0.343
	2	0.240	0.071
	3	0.112	0.014

Table 3. Descriptive statistics of explanatory parameters

Parameters	Female	Male
SELF-PERCEIVED ABILITY		
MATHS (NUM)		
5 Much better	0.250	0.386
4 Better	0.321	0.243
3 About the same	0.281	0.214
2 Worse	0.133	0.129
1 Much worse	0.015	0.029
READING (READ)		
5 Much better	0.485	0.286
4 Better	0.270	0.429
3 About the same	0.199	0.271
2 Worse	0.046	0.014
1 Much worse	0.000	0.000
WRITING (WRIT)		
5 Much better	0.403	0.300
4 Better	0.270	0.257
3 About the same	0.250	0.357
2 Worse	0.077	0.071
1 Much worse	0.000	0.000
FINANCIAL KNOWLEDGE (FIN)		
5 Much better	0.082	0.071
4 Better	0.194	0.271
3 About the same	0.571	0.543
2 Worse	0.138	0.100
1 Much worse	0.015	0.014
SOCIO-ECONOMIC STATUS (SES)		
1 - 10	6.306	6.386
RISK AVERSION (RISK)		
5 I take substantial financial risks expecting to earn substantial returns	0.005	0.100
4 I take above-average financial risks expecting to earn above-average returns	0.061	0.243
3 I take average financial risks expecting average returns	0.306	0.357
2 I am not willing to take any financial risks	0.367	0.214
1 I never have any spare cash	0.260	0.086
OVERCONFIDENCE (CONF)		
6 Describes me completely	0.219	0.314
5 Describes me very well	0.321	0.386
4 Somewhat describes me	0.332	0.229
3 Describes me very little	0.082	0.057
2 Does not describe me at all	0.041	0.014
1 Not applicable	0.005	0.000

Table 4. Probit model parameter estimates of non-responses

	(1)	(2)	(3)	(4)
Parameter	UNS	INTUNS	INFUNS	DIVUNS
FEM	0.510 **	0.706 **	0.696 ***	0.609 ***
	0.196	0.256	0.231	0.202
NUM	-0.064	-0.203 **	-0.062	0.006
	0.084	0.096	0.085	0.080
READ	0.061	-0.040	0.075	0.064
	0.156	0.174	0.151	0.150
WRIT	0.035	-0.066	-0.107	-0.004
	0.139	0.167	0.135	0.135
FIN	-0.263 **	-0.018	-0.273 **	-0.305 ***
	0.120	0.125	0.116	0.115
SES	-0.001	-0.012	-0.015	0.007
	0.035	0.040	0.036	0.035
RISK	-0.129	0.064	-0.039	-0.157 *
	0.093	0.124	0.092	0.091
CONF	-0.051	-0.071	-0.031	-0.050
	0.085	0.108	0.084	0.080
AGE	-0.130 *	-0.071	-0.104	-0.104
	0.078	0.108	0.084	0.079
INC	-0.065	-0.027	-0.083	-0.048
	0.056	0.069	0.057	0.056
Cons	1.594 *	0.022	0.905	1.207
	0.695	0.779	0.713	0.667
Pseudo R2	0.095	0.071	0.088	0.100
LR Chi2	27.09 ***	23.27 ***	29.83 ***	29.12 ***

Notes:

*p<0.10, **p<0.05, ***p<0.01