

Running head: FINANCIAL CAPABILITY AND EMOTION REGULATION

How financially capable are the Dutch? A first exploration on financial capability and the role of emotion regulation in a representative sample of Dutch households

Mark van Overveld<sup>a</sup>

Ale Smidts<sup>a</sup>

Gilbert Peffer<sup>b</sup>

Adele Atkinson<sup>c</sup>

First draft May 2011

Do not cite without permission.

---

<sup>a</sup> = Department of Marketing, Rotterdam School of Management, Erasmus University Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, the Netherlands. <sup>b</sup> = Centre of Numerical Methods in Engineering, Barcelona, Spain. <sup>c</sup> = OECD Paris, France. Please address reprint requests and correspondence to: W.J.M. van Overveld, Marketing Management, Rotterdam School of Management, Erasmus University Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, the Netherlands. Tel.: +31-(0)-10-4081970. Fax: +31-(0)-10-4089572. Email: [MOverveld@RSM.nl](mailto:MOverveld@RSM.nl)

*Keywords:* Financial capability, financial literacy, emotion regulation, money attitude, personal finance, big five

## Abstract

In the general population, alarming levels exist of financial illiteracy. Many people do not understand financial products very well, and this may have severe consequences for the finances of individual households. Yet, in addition to financial literacy, it may also be that some individuals are more skilled to make financial decisions than others. That is, individual levels of financial capability may vary. The present study provides a first psychometric exploration of a newly developed questionnaire on financial capability (Financial capability Questionnaire; FCQ), and tested it in a large and representative sample of the Dutch population (N=5435). Further, indices on emotion regulation were administered which show that emotion regulation influences financial capability after controlling for various variables (i.e., demographic, socio-economic and personality variables). In specific, those who actively address problems in general (high re-appraisal) would also do so in financial affairs while problem-avoiders (high suppression) demonstrated a lack of interest in problems concerning their personal finance. The data implicate that financial capability programs could be improved by focusing on emotion regulation strategies.

Financial illiteracy, defined as an individual lack of knowledge of financial products (e.g., interest rates, mortgages, bank and savings accounts) is fairly common. For example, recent research showed that even people in the well-educated and relatively wealthy Dutch general population are generally not well-informed on financial products (Antonides, de Groot, van Raaij, 2008). This is particularly alarming, as households need to make financial decisions on a regular basis, and making ill-informed decisions gravely impacts the financial situation of the household.

Yet, financial educational programs only appear to have limited success in establishing improvements in financial decision-making in individuals (Atkinson, 2008; de Meza & Irlenbusch, & Reyniers, 2008). Interestingly, previous research has focused mainly on people's actual knowledge of financial products and whether people should be generally informed enough to make financial decisions. Research has largely neglected the interpretation of managing money as a skill which is fueled by rational processes, but also via personal attitudes towards personal finance (Atkinson, 2008; de Meza & Irlenbusch, & Reyniers, 2008) and even personality aspects (e.g., Nyhus & Webley, 2001). For example, it may not only be important whether individuals are aware and informed that they should make plans for retirement (e.g., van Rooij, Lusardi, & Alessie, 2009), but also whether individuals find it generally important to make long-term plans at all. The financial situation of a household may thus be strongly related to skills and attitudes related to financial decision-making. Some participants may be better equipped than others to deal with money and financial products and consequently, demonstrate more adequate financial decision-making in their personal finances. According to the British Financial Services Authority (FSA; 2005), financial capability can be defined as follows: *“Financially capable people are able to make informed financial decisions. They are numerate and can budget and manage money effectively. They understand how to manage credit and debt. They are able to assess needs for*

*insurance and protection. They can assess the different risks and returns involved in different saving and investment options. They have an understanding of the wider ethical, social, political and environmental dimensions of finances.” (FSA, 2005).*

In the literature (Atkinson, 2008; FSA, 2005), financial capability is reflected in five distinct financial dimensions or domains: making ends meet, keeping track of the personal finance situation, the ability to plan ahead, the ability to choose between financial products, and to stay informed on financial products. Although research on the topic is scarce, a recent study in 4280 Dutch consumers showed that, in addition to financial knowledge, good financial management depended on being able to make ends meet, saving, and maintaining a financial overview (Antonides, de Groot & van Raaij, 2008), which seem to overlap significantly with the FSA financial capability domains.

A first goal of this study is to develop a valid measure of financial capability. Although several items on financial capability are available (e.g., Antonides, de Groot, & van Raaij, 2008), currently, there is no general index on individual financial capability levels. Such an index would be extremely valuable. For example, to be able to compare financial capability levels across countries, or as a means of evaluating the effects of a financial education programme. This study presents a first exploration of a newly developed index, the Financial Capability Questionnaire (FCQ). It is the only instrument to date that measures both financial behaviors and attitudes towards relevant aspects of personal finance, and consistently so for each of the five domains. We will assess the psychometric features and study its relationship with indices on behavior in individual's personal finance. To determine whether higher scores on the financial capability questionnaire would indeed be associated with higher scores on a scale relating to financial behaviors, (spending patterns as indexed by Spendthrift Tightwad Scale; Rick et al., 2008) and an established index on planning ahead (Propensity to Plan; Lynch et al., 2010). Both were administered to establish convergent

validity of the FCQ.

A second goal of the paper is to study the role of emotion regulation on financial capability. Whether people prove themselves financially capable, may not merely be the result of adequately balancing rational thoughts and behaviors. Emotions may also impact personal finance in various ways. For example, experiencing both negative and positive emotions can be involved in impulse buying (e.g. Mick & Demoss, 1990). Furthermore, emotions have been shown to affect financial risk attitude (Lerner & Keltner, 2001). However, we propose that it is not the emotion per se that is important to financial decisions, but how to effectively deal with daily emotions that could have a direct influence on financial decisions, in other words, emotion regulation. Emotion regulation can be defined as the ability to enhance or reduce emotions as needed (Gross, 2007). It encompasses a broad set of skills and abilities to keep the emotional system healthy and functioning. Although emotion regulation is a widely studied phenomenon, investigations within the context of (personal) finance are extremely scarce.

Previous studies already showed that a decrease in self-regulatory processes is associated with a less long-term financial planning (Howlett, Kees, & Kemp, 2008) and with more impulse buying (Vohs & Faber, 2007). Further, a preliminary study showed that instructions to think like a trader and act as rationally as possible in financial decisions rendered participants more successful in an investment simulation (Seo & Barrett, 2007). Thus, managing emotions less effectively impacts financial decision making, and may even be susceptible to significant improvements using emotion regulation strategies.

Emotion regulation processes can be defined in various ways. The most widely used distinction is between two emotion regulation styles that are regarded as traits, stable factors over time, namely, 're-appraisal' and 'suppression'. Re-appraisal means that individuals tend to interpret and appraise the emotions that are experienced to alter their emotional

significance, while individuals who suppress attempt to block the conscious experience of the emotion. A more recent approach is the concept of defensive coping (Carver, Scheier, Weintraub, 1989), which suggests that individuals have a wide arsenal of available coping styles at their disposal when confronted with an emotion. Certain coping styles overlap significantly with emotion regulatory processes of negative emotions. Particularly defensive coping styles, where the individual does not manage emotions actively but uses maladaptive emotion regulation strategies (e.g., problem-avoidance).

To summarize, the major aim of the current study is to examine both the construct of financial capability and its relations to emotion regulation. First, it will be explored whether the Financial Capability Questionnaire appears a valid index of financial capability. Second, it will be investigated whether higher levels of financial capability are associated with higher levels of emotion regulation traits (i.e., Re-Appraisal as indexed by Emotion Regulation Questionnaire, ERQ; Gross & John, 2003) and with more adequate coping styles (i.e., active coping as indexed by COPE; Carver, 1997) whilst lower financial capability levels may be associated with defensive coping styles (e.g. avoidant coping as indexed by COPE). Various control variables (i.e., demographic variables, socio-economic variables, and personality traits) will be taken into account. Finally, it will be explored whether higher levels of financial capability are associated with demonstrating higher levels of adequate financial planning and spending patterns.

## Methods

*Participants*; Panel members of the LISS-Dutch Household Survey ( $N=8000$ ) were invited to participate in the present study (response rate= 67.8%;  $N = 5424$ ). Mean age of the participants is 49.1 years ( $SD=17.40$  ; range = 16-97). The sample consisted of 54% women

(2931 women) and contained individuals from 3674 individual households<sup>1</sup>.

### *Materials*

*Financial Capability Questionnaire (FCQ)*. The FCQ measures an individual's financial capability. It focuses on both attitudes and explicit behaviors to indicate financial capability across five domains: making ends meet, keeping track, planning ahead, choosing products, and staying informed. The attitude part of the FCQ consists of seventeen items where participants indicate to which extent they agree to a series of statements on their personal finance (e.g., 'It is not a shame to be 'in the red' on your bank account at the end of the month.'). Items were rated on a six-point Likert type scale from 1 (=completely disagree) to 6 (=completely agree). The behavior part of the FCQ consists of fifteen items that reflect how strongly participants demonstrate financial capable behavior (e.g., 'In the past 12 months, how often did it happen that you ran out of money before the end of the month?' and 'How often do you check the amount on your bank account?'). Items were rated using various formats (e.g., Likert-type formats and questions with multiple answer categories). The FCQ builds upon and uses some items from earlier questionnaires by the FSA (2005) and Centiq, a platform initiated by the Ministry of Finance and in which about forty partners from the financial world participate to strengthen consumer's positions in the financial domain (Antonides, de Groot, van Raaij, 2008). In the Appendix, the full FCQ is presented.

*Emotion Regulation Questionnaire (ERQ; Gross & John, 2003)*; The ERQ measures individual dispositional emotion regulations. Participants indicate how well a series of ten statements apply to them on a scale from 1 (=strongly disagree ) to 7 (=strongly agree). Two subscales are distinguished on emotion regulation strategies: re-appraisal and suppression. The ERQ is a valid and reliable index for establishing emotion regulation strategies (Gross &

---

<sup>1</sup> In the current manuscript, preliminary findings are reported that do not yet take into account the nested structure of individuals within households. Future work will involve a multilevel modeling approach to examine more accurately the role of financial capability between households.

John, 2003).

*COPE* (Carver & Scheier, 1989). The COPE measures individual coping styles. Participants rate 30 items on how they would cope with a negative situation. Although COPE consists of nine subscales in the present study, we combined these subscales into three composite subscales: active coping, support-seeking coping, and avoidant coping. The COPE has good psychometric properties in terms of validity and reliability (Carver, 1997; Clark, Bormann, & Cropanzano, 1995).

*International Personality Item Pool (IPIP; Goldberg)*; This questionnaire measures personality traits according to the Big Five factorial model. Participants rate whether fifty statements describe their personality well according to a five-point Likert scale from 1 (very inaccurate) to 5 (very accurate). Five subscales are distinguished that describe: Openness, Agreeableness, Conscientiousness, Extraversion, and Emotional stability. The IPIP has good validity and high internal consistency (Gow, Whiteman, Patty, & Deary, 2005).

*Propensity to plan (PP; Lynch, Netemeyer, Spiller, & Zammit, 2010)*; This scale measures an individual's propensity to plan ahead in terms of money or time. In the present study, only the long-term variant for planning ahead with money was used. Here, participants rate six items on a six-point scale from 1 (=strongly disagree) to 6 (=strongly agree). Higher scores reflect higher propensity to plan expenditure over the next six months. The PP has been associated with other financial planning indices (e.g., Ameriks Financial Planning) and internally consistent (Lynch et al., 2010).

*Spendthrift-Tightwad Scale (STS; Rick, Cryder, & Loewenstein, 2008)*; The STS measures whether individuals can be characterized as tightwad (having trouble spending money) or spendthrifts (having trouble limiting their spending behavior). On four items with various Likert-type formats, participants rate their spending behavior directly or compared to a fictitious scenario (e.g., 'Do you have trouble limiting your spending?'). Higher scores

reflect higher tendency for spendthrift, lower scores indicate tightwadness. The STS is a valid and internally consistent index (Rick, Cryder, & Loewenstein, 2008).

*Demographic and socio-economic variables:* several items were completed using various scoring formats on demographical information (i.e., age, gender, marital status, number of children living at home, urban/rural, education, position in the household, number of household members) and socio-economic situation (type of house, living alone or with a partner and/or children, main daily activity, net income on individual and household level).

### Procedure

The panel of the LISS-panel is a carefully designed representative sample of the Dutch general population run by CentERdata at Tilburg University. Based on true probability, participating households are drawn from the Dutch population register. Participants complete internet questionnaires for the LISS-panel on a monthly basis and receive a small fee per completed survey study. In August 2010, participants were invited to participate in the present study, and they received a reminder at the end of August. The study itself took half an hour to complete, and has been conducted in accordance with standard ethical guidelines.

### *Data reduction and analysis*

First, we explored the factor structure of the FCQ. Given the formative scaling of the FCQ, path modeling was used to explore its factor structure using SmartPLS. (Andreev, Heart, Maoz, & Pliskin, 2009; Diamantopoulos & Winklhofer, 2001). Factor scores that were obtained via SmartPLS were then used in all further analyses. Using SPSS (version 17), data were examined for normality. For monthly income, a log transformation was applied to normalize the data, and dummy variables were created if appropriate. For variable main daily activity, dummies were made for school, retired, running a household and working freelance with reference category having a dayjob. Additionally, data were cleaned to remove the

influence of outliers. Regression analyses were used to study the respective contribution of emotion regulation in financial capability domains, when controlling for demographic, socio economic and general personality variables.

## Preliminary Results

### *Path-modeling*

Figures 1a and 1b summarize the final models of FCQ-Attitude and FCQ-Behavior. For FCQ-Attitude, 6 items did not demonstrate significant loadings and were removed for further analyses. Moreover, as path modeling requires frequent exploration of the most suitable model, the most meaningful model appeared a model with only two factorial dimensions, abandoning the five-domains approach for financial attitudes and yielding stronger support for an active money management attitude and a passive money management attitude. Active money management would indicate a strong attitude towards being in control of personal finances and actively keeping oneself up to date on personal financial affairs, whereas passive money management would reflect a strong attitude towards not caring much about all matters related to personal financial affairs. As expected, the two attitudes correlated modestly with each other ( $r = .35; p < .01$ ). For the FCQ-B, although five domains were hypothesized in the FCQ, the Staying informed domain and the Choosing products domain appeared to collapse together in the analyses resulting in four dimensions. One item did not demonstrate significant loadings in the model, and was consequently excluded for further analyses.

-- insert Figures 1a and 1b here --

### *Descriptives*

Table 1 presents a summary of the descriptive statistics of the sample, including means and internal consistencies of each of the questionnaires<sup>2</sup>.

---

<sup>2</sup> Although the FCQ is conceived as a formative scale and internal consistency measures may not be especially informative, we presented the internal consistencies in Table 1.

-- insert Table 1 here --

### *Regressions*

Next, a series of multiple regressions analyses using a blocked entry model were conducted to determine whether the demographic, socio-economic, personality, and emotion regulation variables were associated with the various domains. Hence, in each regression analysis, the FCQ-scales (FCQ-A active, FCQ-A passive, FCQ-B MEM, FCQ-B KT, FCQ-PA, FCQ-CP) were included as dependent variables, respectively. In step 1, demographic variables (age, gender, position in household, number of children living at home, number of household members, urban or rural, living with a partner, education) would be inserted, in step 2 socio-economic variables (type of house, living with partner, daily activity dummies and net income of household), and in step 3 personality indices. Finally, in step 4, emotion regulation indices (ERQ) would be inserted<sup>3</sup>. Tables 2a and 2b present the final models for each of the regressions. Only predictors that remained significant ( $p < 0.05$ ) in the final models are presented here.

With respect to demographic variables, age proved a significant predictor in most models, so experience seems essential to good money management. While men were more strongly associated with money behaviors (PA, CP), women were more strongly associated with money attitudes (both active and passive). One explanation may be that men have to deal more (or are more interested) in long term money decisions in the household (PA, CP) and only consider money as a valuable asset for the household's wellbeing the long term (money attitudes). The number of children in a household was only a significant predictor in planning ahead (PA), indicating that need for planning increases with responsibility levels within the household. In a similar vein, being the household head predicted keeping track (KT) and searching behavior on financial products (CP-behaviors; both  $p$ 's  $< .05$ ). Hence, the

---

<sup>3</sup> Exploratory factor analyses (principal component analyses; Oblimin rotation) demonstrated that the ERQ and COPE demonstrate shared variance. Hence, we only included one of the emotion regulation indices in any analyses. So, all regression analyses were first conducted separately for COPE and ERQ.

household head is the main responsible person for daily personal financial affairs and responsible for searching and deciding on new or other financial products. Education was associated with both higher levels of MEM, PA, and CP indicating that education improves the ability of these crucial planning and choosing behaviors.

--Insert Tables 2a and 2b here--

With respect to socio-economic variables, the type of house was negatively associated with financial capability. Hence, home owners display higher levels of financial capability than people who rent or are living in parental homes. Both young adults going to school as well as retired aged persons significantly predicted passive attitudes, MEM, KT, which may indicate that these persons mainly demonstrate short-term money management. Having a dayjob (compared to other: running household, school, retired, and other combined) was negatively associated with various domains (MEM, PA, CP), so generating money for the household and managing it effectively may present distinct phenomena.

For the personality variables, higher levels of extraversion were generally detrimental for both financial capability attitudes and behaviors, indicating that extravert individuals may be more impulsive in their spending or that they simply go out more to socialize with others whilst shopping, spending, etc. Additionally, agreeableness was associated positively with both money attitude styles. As expected, conscientiousness and emotional stability both had a positive effect on almost all financial capability behaviors and attitudes.

Finally, as regards the influence of emotion regulation, both active coping and re-appraisal were positively associated with active money attitudes as indexed by FCQ-A-Active, whilst FCQ-A passive was associated with both Suppression and COPE-avoidant coping. So, emotion regulation strategies and coping styles were associated with attitudes relating to personal financial affairs. Those who indicated to actively address problems, would also do so in their personal financial affairs, whereas general problem-avoiders (high

suppression, high defensive coping) would demonstrate a lack of interest in problems in their personal finance as well.

For FCQ-B, although emotion regulation strategies and coping styles did not influence the ability to make ends meet, these were positively associated with KT, PA, CP. Higher levels of maladaptive emotion regulation strategies (i.e., defensive coping and suppression) negatively influenced those financial capability domains. Support-seeking coping was only relevant for financial capability behavioral domains that may involve specific financial decisions (PA, CP)

### *Convergent validity*

To examine whether financial capability scores would be associated with financial behaviors, bivariate correlations were calculated between the FCQ-A and FCQ-B scales, and financial indices on spendthrift (STS) and propensity to plan (PP). Table 3 shows that all financial capability scales were significantly associated with these financial indices. For the STS, higher levels of spendthrift were associated with lower levels of financial capability in general. For PP, higher levels of propensity to plan were most strongly associated with active money management. Yet, unexpectedly, correlations between PP and FCQ-PA were low and in the opposite direction. Although this may mean that the FCQ-A is not supported by a more established scale on financial planning, it may be that the PP and FCQ use different time frames to define ‘ long-term’ (PP: next months, FCQ: years from now).

--Insert Table 3 here--

### Discussion

The main findings can be summarized as follows: a) the financial capability questionnaire seems a valid index to assess financial capability, b) financial capability was associated with various demographic factors, socio-economic factors, and personality traits in expected ways,

and c) re-appraisal and active coping were associated with higher levels of financial capability, whereas suppression and defensive coping, were associated with lower levels of financial capability.

Contrary to financial literacy, financial capability has been defined as the individual skills that people may need to handle their personal finances adequately (e.g., Atkinson, 2008; Antonides, de Groot, & van Raaij, 2008). Yet, a valid index was not yet available to assess financial capability. The present study was a first exploration of a new index on financial capability, the Financial Capability Questionnaire, which combined both newly comprised items as well as several items that were derived from earlier work (i.e., Atkinson, 2008; Antonides, de Groot, & Van Raaij, 2008). Following path modeling, the FCQ appeared a valid instrument. With the exception of a few items that did not load on the scales to which they were proposed, both the path models for financial capability attitudes and behaviors were largely supported. As hypothesized, the model that fitted our data best for FCQ-B, was a model with four domains of financial capability: ability to make ends meet, ability to keep track, ability to plan ahead, and the ability to choose financial products. For the attitudes part (FCQ-A), a two-factor distinction appeared to fit the data best, and which presented an active money management style (maintaining an active stance in monitoring expenditure) and a passive money management style (lack of interest in personal finances and necessary activities related to it).

Attesting the validity of the attitudes and behaviors parts of the FCQ, differential associations were observed for both. For example, the type of house (owned versus rented) the household lived in was associated with various domains on the behavior part of the FCQ, but did not affect an individual's attitudes. In line with earlier work (Antonides, de Groot, & van Raaij, 2008; Atkinson, 2008), the results indicate that the attitudes and behaviors part of the FCQ measure meaningful concepts that are related, but not completely identical.

Further attesting to the validity of the FCQ, as expected, higher scores of financial capability (both attitudes and behaviors) were associated with lower levels of spendthrift. Thus, a higher ability to manage money seems to induce more careful (or even thrifty) spending patterns. For propensity to plan, the findings were less clear. As expected, active money management was associated more strongly with planning finances than passive money management. Yet, propensity to plan ahead was associated negatively with Planning ahead domains on the FCQ-B. This could reflect a time-scale issue. The Propensity to plan scale (Lynch et al., 2010) asks about the next six months, whereas the planning ahead items of the FCQ-B may involve a much longer timeframe (e.g., years). The fact that similar short term keeping track domain were negatively associated with propensity to plan seems to support this view, as those who keep track of their finances at present, are more likely to plan ahead for the next few months. Nevertheless, the financial capability questionnaire appeared associated with these two established indices of financial behaviors (Lynch et al., 2010; Rick et al., 2008).

A second goal of the present study was to explore the role of emotion regulation in financial capability. Previous research showed that re-appraisal (actively re-interpreting problematic situations) is a beneficial emotion regulation strategy compared to suppression (e.g., Gross, 2000). The present study is one of the first to explore the role of emotion regulation outside the borders of health psychology and within the context of personal finances. The data showed that emotion regulation strategy re-appraisal and an active coping style were both associated with an active money management style, while emotion regulation strategy suppression and a defensive coping style were more strongly associated with passive money management attitudes. So, those who confront their emotional problems actively, will follow a similar pattern when faced with concerns in their financial affairs, while those who tend to lean on others or avoid problems, are also likely to do so within the domain of

personal finance.

The current data provide implications for policy makers and institutions focused on financial education programs. Recent work suggested that a narrow focus on financial literacy is simply not adequate for increasing the wealth in lower incomes and may explain the generally poor outcome of such programs (e.g., Atkinson, 2008). The present data suggest that financial capability, but also emotion regulation strategies provide interesting candidates to include in addition to financial literacy to focus on in financial education programs. Interventions should be geared towards the dimensions of financial capability such as the ability to plan ahead and making ends meet. Importantly, interventions could also be geared towards improving emotion regulation skills, as these also positively affect financial capability.

Several limitations of the present design can be observed. First, the present study was cross-sectional in design. Thus, no conclusive causal inferences can be made whether emotion regulation strategies have beneficial or detrimental effects on financial capability, or whether emotion regulation is simply the result of having to deal with emotions more strongly due to the stress associated with a poor financial position. Furthermore, all questionnaires were self-report measures. Hence, it is uncertain to which extent social desirability may have influenced our findings. Future research should focus on validating the Financial Capability Questionnaire with actual behavioral tests.

In sum, the financial capability questionnaire measures both attitudes and behaviors for financial capability. It demonstrated differential relationships with relevant constructs (e.g., demographic variables, socio-economic variables, personality traits). Based on the current data, the FCQ appears a valuable index to measure financial capability, to study the determinants of financial capability and guide the design of interventions to improve a households' financial capability. Importantly, emotion regulation appeared to be associated

with financial capability, and indicated that those who would be able to control their emotions better, are more likely to be financially capable.

References

- Andreev, P., Heart, T., Maoz, H., & Pliskin, N. (2009). Validating Formative Partial Least Squares (PLS) Models: Methodological Review and Empirical Illustration. *ICIS 2009 Proceedings*. Paper 193.
- Antonides, G., de Groot, I. M., & van Raaij, W. F. (2008). *Resultaten financieel inzicht van Nederlanders*. CentiQ.
- Antonides, G. de Groot, I. M., & van Raaij, W. F. (2008). *Summary of financial insight among the Dutch*. CentiQ.  
([http://www.wijzeringeldzaken.nl/media/13191/summary\\_financial\\_insight\\_among\\_the\\_dutch.pdf](http://www.wijzeringeldzaken.nl/media/13191/summary_financial_insight_among_the_dutch.pdf))
- Atkinson, A. (2008). Evidence of impact: an overview of Financial education evaluations. London, Financial Services Authority.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*(2), 267-283.
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, *4*, 92-100.
- Clark, K. K., Bormann, C. A., & Cropanzano, R. S. (1995). Validation evidence for three coping measures. *Journal of Personality Assessment*, *65*, 434-455.
- Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: an alternative to scale development. *Journal of Marketing Research*, *38*, 269-277.
- Financial Service Authority (2005). Levels of financial capability in the UK: results of a baseline survey. London, Financial Services Authority.
- Financial Services Authority (2005). *Financial capability baseline survey questionnaire*.

*Consumer research, 47b*, Financial Services Authority, London.

- Gow, A. J., Whiteman, M. C., Pattie, A., & Deary, I. J. (2005). Goldberg's 'IPIP' Big-Five factor markers: Internal consistency and concurrent validation in Scotland. *Personality and Individual Differences, 39*, 317-329.
- Gross, J. (2007). *Handbook of emotion regulation*. New York: Guildford Press.
- Gross, J. J. & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348-362.
- Howlett, E., Kees, J., & Kemp, E. (2008). The role of self-regulation, future orientation and Financial knowledge in long-term Financial decisions. *The Journal of Consumer Affairs, 42*, 223-242.
- Lerner, J. S., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality & Social Psychology, 81*, 146-159.
- Lynch Jr., J. G., Netemeyer, R. G., Spiller, S. A., & Zammit, A. (2010). A generalizable scale of propensity to plan: The long and the short of planning for time and for money. *Journal of Consumer Research, 37(1)*, 108-128.
- De Meza, D. Irlenbusch, B., & Reyniers, D. (2008). Financial capability: a behavioral economics perspective. *Consumer Research 69*, Financial Service Authority.
- Mick, D. G., & Demoss, M. (1990). Self-gifts: phenomenological insights from four contexts. *The Journal of Consumer Research, 17*, 322-332.
- Nyhus, E. K., & Webley, P. (2001). The role of personality in household saving and \ borrowing behavior. *European Journal of Personality, 15*, 85-103.
- Rick, S. I., Cryder, C. E., & Loewenstein, G. (2008). Tightwads and spendthrifts. *Journal of Consumer Research, 34*, 767-782.

Rooij, M.C.J. van, A. Lusardi and R.J.M. Alessie, 2009, Financial literacy and retirement planning in the Netherlands, DNB Working Paper, no. 231.

Schafer, J. L., & Graham, J. W. (2002). Missing data: our view of the state of the art.

*Psychological Methods*, 7, 147-177.

Seo, M. G., & Barrett, L. F. (2007). Being emotional during decision making – good or bad?

An empirical investigation. *The Academy of Management Journal*, 50, 923-940.

Vohs, K. D., & Faber, R. J. (2007). Spent resources: self-regulatory resource availability

affects impulse buying. *Journal of Consumer Research*, 33, 537-547.

### Acknowledgements

The research was carried out and funded as part of the xDelia research project ([www.xdelia.org](http://www.xdelia.org)). We gratefully acknowledge funding from the European Commission under the 7th Framework Programme, Grant No. 231830. Further, the authors would like to express their gratitude towards CentERdata for the opportunity to draw on the data from the LISS panel.

Captions

Figure 1a. Path model for FCQ-A.

Figure 1b. Path model for FCQ-B.

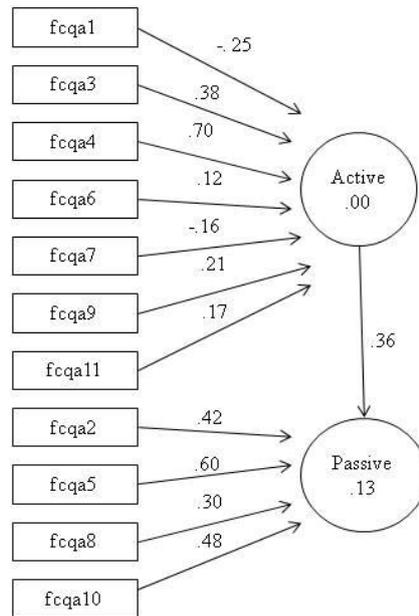
Table 1. Descriptive statistics for all questionnaires.

Table 2a. Multiple regression for FCQ-A

Table 2b. Multiple regression for FCQ-B

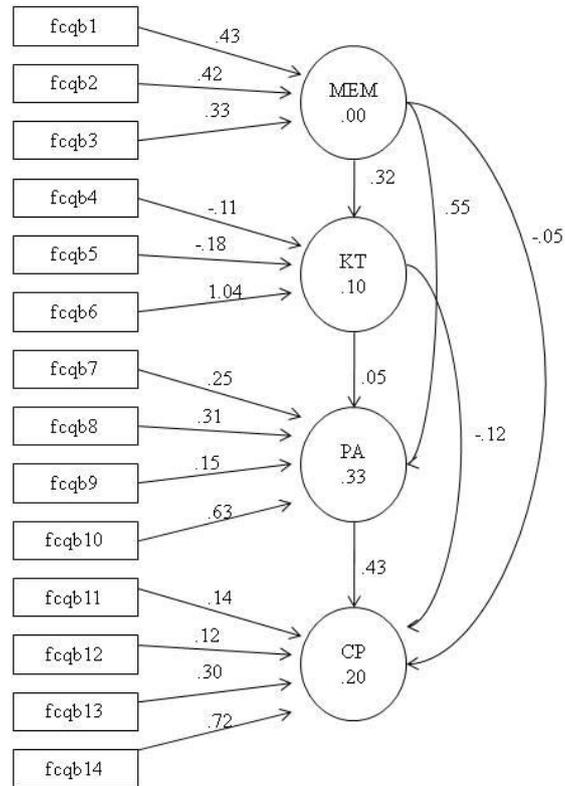
Table 3. Correlations between FCQ and financial indices (PP, STS)

Figure 1a. Path model for FCQ-A



Note: all values presented are R-squares.

Figure 1b. Path model for FCQ-B



Note: all values presented are R-squares.

Table 1. Descriptive statistics for all questionnaires.

Index	Mean (SD)	Actual range	Cronbach's alpha
<b><u>FCQ-A</u></b>			
Active	4.27 (.80)	1 – 6	.38
Passive	4.05 (.73)	1 – 6	.52
<b><u>FCQ-B</u></b>			
MEM	4.19 (.76)	1 – 5	.80
KT	3.49 (.93)	1 – 5	.48
PA	2.58 (.69)	1 – 5	.55
CP	1.89 (1.10)	1 - 6	.65
<b><u>Demographic</u></b>			
Age	49.02 (17.40)	16 - 97	
Gender	46% male	0 - 1	
Partner	.75 (.43)	0 – 1	
# Children living at home	.80 (1.06)	0 - 3	
Urbanization	2.99 (1.28)	1 – 5	
Education	3.41 (1.52)	1 - 6	
Position in household (household head, partner, children, other)	1.57 (.72)	1 – 4	
Number of household members	2.61 (1.33)	1 - 9	
<b><u>Socio-economic variables</u></b>			

House (own, rent)	73% own, 27% rent	
Living together (with partner and/or children)	19 % single, 39% living with partner, 36% with partner and children, 5% single with children	1 - 4
Main daily activity (school, running household, dayjob, retired, or working freelance)	3.24 (1.12)	0 – 1
Net household income per month	15.000 (1401.80)	0 – 15.000

**Personality**

Extraversion	3.27 (.63)	1 – 5	.87
Agreeableness	3.89 (.48)	1 – 5	.80
Conscientiousness	3.71 (.52)	1 – 5	.78
Emotional stability	3.42 (.66)	1 – 5	.87
Imagine	3.48 (.49)	1 - 5	.76

**Emotional regulation**

ERQ-Re-appraisal	4.45 (.91)	1 – 7	.81
ERQ-Suppression	3.56 (1.15)	1 – 7	.78
COPE-active coping	2.50 (.49)	1 – 4	.81
COPE-support seeking	2.29 (.62)	1 - 4	.82
COPE-avoidant coping	1.85 (.44)	1 - 4	.55

**Financial related skills**

PP	3.84 (.67)	1 – 6	.73
STS	3.50 (.88)	1 – 6	.56

---

Abbreviations: FCQ = Financial Capability Questionnaire, ERQ = Emotion regulation questionnaire; MEM = Making ends meet, KT = Keeping track, PA = Planning ahead, CP = Choosing products and staying informed; PP = Propensity to plan; STS = Spendthrift Tightwad Scale.

Table 2a. Multiple regression for FCQ-A

	FCQ-A			
	Active		Passive	
	<i>B (SE B)</i>	<i>P</i>	<i>B (SE B)</i>	<i>p</i>
<u>Demographic variables</u>				
Gender	-.08 (.04)	.03	-.16 (.04)	<.01
Age	.01 (.01)	<.01	.01(.01)	<.01
Position in household	-.06 (.03)	.11	.00 (.04)	.95
# children	-.12 (.11)	.30	-.04 (.12)	.75
# household members	.08 (.11)	.50	-.01 (.12)	.94
Urban	.02 (.01)	.06	.02 (.01)	.04
Partner	-.06 (.12)	.60	-.00 (.03)	.97
Education	.01 (.01)	.33	.02 (.01)	.15
<u>Socio-economic variables</u>				
Type of house	-.14 (.04)	<.01	-.09 (.04)	.02
Living together	-.01 (.03)	.66	-.00 (.03)	.91
Dummy school	-.02 (.07)	.81	.29 (.07)	<.01
Dummy running household	.11 (.06)	.05	.05 (.06)	.39
Dummy retired	.03 (.05)	.53	.14 (.05)	.01
Dummy other	.01 (.04)	.78	.05 (.04)	.22
Nett household income	.19 (.09)	.02	.16 (.09)	.08
<u>Personality</u>				
Extraversion	-.11 (.02)	<.01	-.08 (.03)	<.01

Financial capability in the dutch general population 29

Agreeableness	.14 (.03)	<.01	.07 (.04)	.05
Conscientiousness	.44 (.02)	<.01	.34 (.03)	<.01
Emotional stability	-.01 (.02)	.83	.04 (.02)	.08
Imaginability	.03 (.03)	.33	.03 (.03)	.44
<u>Emotion regulation</u>				
Re-appraisal	.06 (.02)	<.01	-.01 (.02)	.62
Suppression	.01 (.01)	.67	-.05 (.01)	<.01
<hr/>			Valid N	
			4744	
<hr/>				

Abbreviations: FCQ-A = Financial Capability Questionnaire-Attitudes, FCQ-B=Financial Capability Questionnaire-Behavior, MEM = Making ends meet, KT = Keeping track, PA = Planning ahead, CP = Choosing products and staying informed.

Table 2b. Multiple regression for FCQ-B

	<b>FCQ-B</b>								
	<b>MEM</b>		<b>KT</b>		<b>PA</b>		<b>CP</b>		
	<i>B (SE B)</i>	<i>p</i>	<i>B (SE B)</i>	<i>p</i>	<i>B (SE B)</i>	<i>p</i>	<i>B (SE B)</i>	<i>p</i>	
<u>Demographic variables</u>									
Gender	.00 (.03)		.93	.02(.03)	.58	.09 (.03)	.01	.26 (.03)	<.01
Age	.01 (.00)	<.01		.01(.01)	<.01	.01 (.00)	<.01	.00(.01)	.11
Position in household	.03 (.03)		.35	-.09 (.03)	.01	-.05 (.03)	.12	-.21 (.03)	<.01
# children	.13 (.11)		.24	-.15 (.11)	.18	.29 (.11)	.01	.21 (.11)	.05
# household members	-.25 (.11)		.02	.09 (.11)	.44	-.34 (.11)	<.01	-.27 (.11)	.01
Urban	.02 (.01)		.11	.02 (.01)	.08	.04 (.01)	<.01	-.01 (.01)	.45
Partner	.11 (.11)		.31	-.18 (.11)	.11	.26 (.11)	.02	.26 (.11)	.02
Education	.04 (.01)	<.01		.00 (.01)	.94	.10 (.01)	<.01	.12 (.01)	<.01
<u>Socio-economic variables</u>									

Type of house	-.31 (.03)	<.01	-.03 (.03)	.42	-.43 (.03)	<.01	-.38 (.03)	<.01
Living together	-.09 (.03)	<.01	-.01 (.03)	.92	-.04 (.03)	.14	.03 (.03)	.31
Dummy school	.16 (.08)	.05	.29 (.09)	<.01	.12 (.08)	.12	-.15 (.08)	.06
Dummy household	-.16 (.08)	.05	-.29 (.09)	<.01	-.12 (.08)	.12	.15 (.08)	.06
Dummy retired	.02 (.06)	.66	.12 (.06)	.04	-.07 (.06)	.17	-.05 (.06)	.42
Dummy freelance	-.32 (.06)	<.01	.03 (.06)	.62	-.17 (.06)	<.01	-.06 (.06)	.30
Net household income	1.25 (.08)	<.01	.24 (.09)	<.01	1.14 (.08)	<.01	.73 (.08)	<.01

### Personality

Extraversion	-.06 (.02)	<.01	-.00 (.02)	.90	-.07 (.02)	<.01	-.01 (.02)	<.10
Agreeableness	.01 (.03)	.86	.02 (.03)	.54	-.05 (.03)	.15	-.08 (.03)	.02
Conscientiousness	.23 (.03)	<.01	.46 (.03)	<.01	.12 (.03)	<.01	.14 (.03)	<.01
Emotional stability	.19 (.02)	<.01	.12 (.02)	<.01	.11 (.02)	<.01	-.03 (.02)	.10
Imaginability	-.02 (.03)	.51	.03 (.03)	.37	.04 (.03)	.19	.30 (.03)	<.01

### Emotion regulation

Re-appraisal	.01 (.01)	.72	.04 (.02)	<.01	-.01 (.01)	.78	.07 (.01)	<.01
Suppression	-.01 (.01)	.32	-.01 (.01)	.30	-.04 (.01)	<.01	-.05 (.01)	<.01
Valid N								4739

Abbreviations: FCQ-A = Financial Capability Questionnaire-Attitudes, FCQ-B=Financial Capability Questionnaire-Behavior, MEM = Making ends meet, KT = Keeping track, PA = Planning ahead, CP = Choosing products and staying informed.



Table 3. Correlations between FCQ and financial indices (PP, STS)

	FCQ-A		FCQ-B			
	Active	Passive	MEM	KT	PA	CP
STS	-.29	-.27	-.22	-.23	-.20	-.10
PP	.35	.12	-.13	.13	-.11	.12
Valid N						5419

All correlations significant at  $p < .01$ . Abbreviations: FCQ-A = Financial Capability Questionnaire-Attitudes, FCQ-B = Financial capability questionnaire-behavior, MEM = making ends meet, KT = keeping track, PA = planning ahead, CP = choosing products, PP = propensity to plan, STS = spendthrift/tightwad scale.



friends.

8. Shopping around for the cheapest item only saves you nickels and dimes.

9. If I have to take out a loan for running expenditures, I have failed.

10. The future will reveal itself.

11. I find it important to regularly check how much money is on my bank account.

Active : 1,3,4,6,7,9,11

Passive: 2,5,8,10

### FCQ-B

Please indicate for the following statements which answers are most applicable to you.

1. In the past 12 months, how often did it happen that you ran out of money before the end of the month?	Never <input type="radio"/>	Almost never <input type="radio"/>	Sometimes <input type="radio"/>	Often <input type="radio"/>	Always <input type="radio"/>		
2. How often can you pay your bills and meet your financial obligations?	Rarely to never <input type="radio"/>	Almost never <input type="radio"/>	Sometimes <input type="radio"/>	Often <input type="radio"/>	With ease <input type="radio"/>		
3. How easily can you make ends meet on your current income?	Very difficult <input type="radio"/>	Difficult <input type="radio"/>	Sometimes <input type="radio"/>	Often <input type="radio"/>	Very easy <input type="radio"/>		
4. How precise do you usually know how much money is on your	Not a clue <input type="radio"/>	Within margin of 400 € <input type="radio"/>	Within margin of 200 € <input type="radio"/>	Within margin of 150 € <input type="radio"/>	Within margin of 100 € <input type="radio"/>	Within margin of 50 € <input type="radio"/>	Not applicable <input type="radio"/>

bank account?

5. How often do you check the amount on your bank account?  
 Rarely to never  Almost never  Sometimes  A few times a week  Daily  Not applicable

6. How well is your overview of financial expenditure ?  
 Don't pay attention to it  Hardly overview  Moderate overview  Reasonable overview  Good overview

7. Do you have money saved in any of the following ways:  
 In a bank account that you do not use for day to day money management (savings account).  
 In investments, bonds or securities.  
 Invested in land and property.  
 Saved in another country (remittances).  
 Other: .....

8. Thinking about the total amount of money that you have saved at the moment in all those ways, would you say that it would be:  
 Much less than your monthly income  Less than your monthly income  About equal to your monthly income  More than your monthly income  Much more than your monthly income

9. For how long would you be able to make ends meet if you lost the main source of income coming into your household?  
 Less than a month  More than one, but less than three months  More than three, but less than six months  More than six, but less than twelve months  Twelve months or more

10. How would you find the money to cope with an unexpected drastic drop of income and/or an unexpected high expenditure?  
*Drastic = an expense equivalent to your income for a month or more.*  
 Would not find money  
 Draw money from current account  
 Use existing savings / investments  
 Loan money  
 Get help from family and/or friends  
 Earn extra money  
 Cut spending  
 Some other way (e.g., sell something):.....

11. Please could you tell me which, if any, of the following financial products you have personally taken out in the last five years, whether or not you still have them?

- Investments (investments, bonds, endowment policy that was not linked to a mortgage)
- Mortgage
- Life insurance, critical illness insurance
- A credit card
- A personal loan (consumptive credit) or other type of credit agreement.
- General insurance (e.g. car insurance, home insurance or private medical or dental insurance)
- A savings account
- A current account
- None of the above

12. In deciding which financial product (e.g., bank account, savings account, mortgage) to take out, I am influenced by

- Comparison websites and shopping around a lot of different sources
- An independent Financial Adviser (including relatives who are IFAs).
- Independent information in newspapers, magazines, radio or TV shows information
- Information collected from providers or providers websites. friends / family.
- Nobody, I make the choice entirely by myself.
- other, namely....

*Multiple answers possible*

13. In deciding which financial product (e.g., bank account, savings account, mortgage) to take out, to what extent do you shop around?

- I shop around a lot
- I compare at least with one other product.
- I don't compare, they are all about the same anyway.
- I should compare, but in reality, I don't.
- No idea.
- Never purchased a financial product.

14. I monitor:

- Changes in interest rates of saving accounts.
- Changes in interest rates for mortgages
- Changes in stock market.
- Changes in inflation.
- Changes in taxation (e.g. income tax, inheritance tax, capital gains tax).Never purchased a financial product.
- Changes in the job market.
- Changes in pensions.
- What are the best buys in financial products.
- Changes in the housing market and/or rent prices.

*Multiple answers possible*