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Financial Well-Being A Conceptual Model and Preliminary Analysis

Final edition

SIFO
Consumption Research Norway
OSLO AND AKERSHUS UNIVERSITY COLLEGE OF APPLIED SCIENCES

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Sammendrag

Denne rapporten handler om '*financial well-being'* — økonomisk trygghet på norsk. Studien føyer seg inn i en fagtradisjon som omfatter begreper som '*økonomisk integrasjon*', '*financial literacy*' og '*financial capability*', og er en videreføring av disse perspektivene på personlig økonomi i velferdsstaten. Etter en gjennomgang av tidligere publikasjoner på feltet, defineres økonomisk trygghet som *«… hvorvidt man er i stand til å møte alle sine nåværende forpliktelser og behov innenfor gode økonomiske rammer, og samtidig ha økonomisk bærekraft til å opprettholde dette i fremtiden.»* Deretter presenteres en teoretisk modell for hvordan fenomenet best kan analyseres for å identifisere de viktigste mekanismene bak den ulike fordelingen av økonomisk trygghet i befolkningen.

De empiriske analysene er basert på et landsrepresentativt datasett fra oktober 2016. Etter en beskrivelse av empirisk strategi, og metodisk tilnærming, presenteres fire regresjonsanalyser — én for hver av de tre underliggende dimensjonene '*overholde økonomiske forpliktelser*', '*økonomisk trygghet i nåtiden'* og '*økonomisk bærekraft i fremtiden*', samt én for økonomisk trygghet sett under ett. Et hovedfunn er at fenomenet har særlig sammenheng med tre atferdstyper: '*behersket forbruk*', '*aktiv sparing'* og '*ikke lånefinansiere løpende utgifter*'. Dessuten har innstillingen om at man selv har kontroll over eget liv stor betydning. Utover dette veier sosioøkonomiske forhold som inntekt, alder, utdanning og arbeidsmarkedstilknytning tungt, dog i noe varierende grad i de tre underliggende dimensjonene. Effektene av økonomiske kunnskaper og erfaringer synes å være små, men dette kan også ha sammenheng med at datatilfanget er svakt på disse områdene.

For bedre å forstå fenomenet økonomisk trygghet, presenteres også én regresjonsanalyse for hver av de seks atferdstypene: *'behersket forbruk*', '*aktiv sparing*', '*ikke lånefinansiere løpende utgifter*', '*økonomisk planlegging*', '*kontroll med inntekter og utgifter'*, og '*informerte produktvalg'*. Resultatene viser at variable klassifisert som psykologiske faktorer gjennomgående har stor effekt. Men også her har både sosioøkonomiske forhold og økonomiske kunnskaper og erfaringer varierende betydning for de ulike atferdstypene.

Analysene i denne rapporten er et første skritt på veien mot en bred forståelse av hva økonomisk trygghet innebærer i et moderne forbrukersamfunn, hvilke faktorer som påvirker graden av trygghet, og hvilke tiltak som er mest effektive for å øke den økonomiske tryggheten i befolkningen. En ny datainnsamling og dybdeanalyser med utgangspunkt i en videreutvikling av den teoretiske modellen er planlagt for 2017-2018. I den forbindelse samarbeider teamet bak rapporten med utvalgte miljøer i både Storbritannia, USA og Australia.

Summary

Based on an extensive literature review and re-analysis of existing qualitative data, this report offers a working definition and an *a priori* conceptual model of financial well-being and its possible determinants. Using survey data from Norway (2016), ten regression models have been conducted to identify the key drivers of financial well-being and enhance the understanding of the underlying mechanisms responsible for the unequal spread of well-being across the population. The preliminary analyses in this report were consistent with both the definition and the model, albeit with some nuances and unexplained effects.

The empirical analysis identified three sub-domains of financial well-being. It was found that all three measures share three behaviours as their main drivers: '*active saving*', '*spending restraints*' and '*not borrowing for daily expenses*'. Also, *'locus of control'* stood out as an important explanatory variable, with significant impacts on all three levels of well-being. Beyond that, some distinguishing characteristics were identified for each of the measures.

Stikkord

Økonomisk utsatthet, økonomisk trygghet, økonomisk dugelighet, økonomisk atferd

Keywords

Financial well-being, financial capability, financial literacy, behaviours

Contents

1. Introduction

The analyses presented in this report build on previous work done by Personal Finance Research Centre (PFRC), University of Bristol, and the World Bank. Led by Elaine Kempson, the team at PFRC conducted the first large-scale study of financial capability in the UK in 2004-2006. It initiated a number of subsequent studies, the most recent publications authored by Andrea Finney and colleagues in 2015 and 2016. In 2010, the World Bank commissioned a project aiming at measuring financial capability in so-called emergent economies. Again, led by Kempson, the core ideas from the UK baseline study were further developed and adapted to fit the challenges of a large-scale comparative study involving countries very different from Western societies. Christian Poppe, Consumption Research Norway (SIFO), was a member of the group of consultants advising the work. The final report, based on focus group interviews and survey data from seven countries, was published in 2013 (Kempson et al., 2013a).

In 2016, Kempson approached SIFO with fresh ideas about a next step, involving linking the concept of financial capability to financial well-being. As part of a wider study on market-based welfare for households, SIFO launched a work package to cover the new approach. The overall aim of the WP is to enhance the understanding of financial capability and well-being, and prepare for better policy initiatives to improve financial security for households and individuals. Based on the World Bank questionnaire, a new measurement instrument was developed and fielded in Norway in October 2016. The report at hand presents the initial results. It also provides the stepping stone for further analyses in 2017 and 2018.

The interest for financial well-being is growing in many countries. The focus is predominantly on factors leading to increased well-being among the population, and the policy measures to achieve it. In Norway, however, the interest has traditionally been on the opposite end of the continuum; viz. keeping track of the proportions of people in financial difficulties and identifying the adequate steps to bring them out of their problematic situation. For this and many other reasons, it has been of great value to be able to discuss theoretical and methodological issues with colleagues in other countries working on the same concepts. These include the Consumer Financial Protection Bureau (CFPB) in the US, the University of New South Wales in Australia and Financial Literacy Australia. The discussions underline the need for cross-country cooperation and comparisons to fully understand financial capability and well-being as social phenomena. Hopefully, the approach and results presented in this report will lead to more collaboration and encourage the provision of data that allows for comparative analysis.

The report is structured as follows. First, Chapter 2 offers an outline of previous research in the field to place the study at hand in perspective. Next, the theoretical basis for the analyses is discussed in Chapter 3, leading to a conceptual model to be tested empirically. This is followed by a description of the methodological approach in Chapter 4, offering empirical identification and definitions of the components and variables needed to test the conceptual model. Chapter 5 presents the findings from ten regression analyses. The final chapter refines the conceptual model based on the empirical results and prepares for future analyses. The questionnaire and a description of the survey data are given in the appendices.

2. Previous Research: From Financial Literacy to Financial Capability and Financial Well-being

2.1. Introduction

In all developed economies, there has been a gradual shift in responsibility for social protection of individual citizens from the state to the individuals themselves. This, together with de-regulation and increased competition, encouraged the financial services industry to develop a diversity of products to meet these needs. Consequently, citizens must operate in an increasingly complex financial marketplace to meet their own social protection needs and those of their household. This has raised concern about the extent to which they are equipped to do so.

The earliest manifestation of this concern was in surveys of financial literacy, which assessed the knowledge levels of particular populations or groups within them and interventions developed that sought to raise knowledge levels. In the mid-2000s a discussion began in earnest about whether policy makers should focus more on what people do rather than what they know - giving rise to the concept of financial capability. At much the same time, behavioural economists were raising similar concerns about the focus on knowledge, arguing that psychological factors are the main determinants of the behaviour of individuals. More recently still, researchers and policy-makers have turned their attention to the outcomes of the decisions and actions of individuals as they seek to meet their social protection needs - giving rise to surveys of financial well-being.

This section begins with a brief overview of key research developments in each of these topics: financial literacy, financial capability, behavioural economics and financial well-being. It then reviews research on their inter-relationships and concludes with an assessment of the key research gaps.

Financial literacy

The seminal definition of financial literacy is 'the ability to make informed judgments and to take effective decisions regarding the use and management of money' (Noctor et al., 1992). There is a large body of research that has sought to measure this concept, most of which has focussed on the knowledge that individuals have. This focus is in line with standard economic theory that well-informed individuals will act rationally to smooth their lifetime consumption. When people fail to behave in an economically rational way it is often assumed to be because they either lack information or they are unable to understand and use it (Garcia, 2013).

The content of financial literacy surveys varies widely but includes: knowledge of the financial marketplace; knowledge and understanding of key financial concepts, such as inflation and compound interest; applied numeracy and the ability to read and extract information from key financial documents such as statements relating to bank accounts or investments.

Surveys of financial literacy have measured knowledge both objectively, generally using multiple choice questions, and also by asking respondents to give a subjective assessment of their knowledge.

Two of the earliest general population surveys of financial literacy were conducted by Schagen and Lines (1996) in the United Kingdom and by Cutler (1997) in the United States. Two countries, Australia and New Zealand, have tracked levels of financial literacy over time. The first survey in Australia was sponsored by ANZ Bank in 2002 (Roy Morgan Research, 2003) and has been repeated every two to three years since. The fifth Australian survey was undertaken in 2014 (ANZ, 2015). The first survey in New Zealand was jointly sponsored by ANZ and the Retirement Commission (Retirement Commission 2005) and has since been repeated twice. The third New Zealand survey was carried out in 2013 (Colmar Brunton, 2013). Although the content of each of these surveys has been revised over time, a core of subjective and objective knowledge questions has been retained throughout. The OECD has also developed a short survey of financial literacy, which it has encouraged a number of countries to use. This is, in reality, a hybrid between financial literacy and financial capability (OECD, 2013).

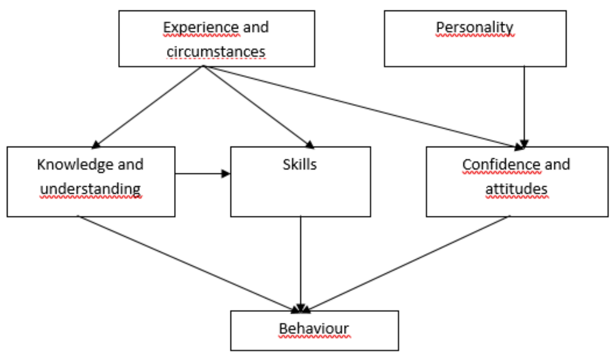
What such surveys have in common is that their content is determined normatively - that is by reference to the knowledge that it is believed that economically rational individuals *ought* to have (Holzmann et al, 2013). And since their questions generally have right and wrong answers the overall measure of financial literacy is generally an arithmetic total of the questions answered correctly. Beyond this, the analysis is largely descriptive and the results are reported as bivariate analysis of individual questions.

2.2. Financial Capability

The first break from this approach occurred in the United Kingdom where the, then, regulator, the Financial Services Authority, was developing the concept of financial capability, with a greater emphasis on behaviours. In 2004, it commissioned a study to conceptualise financial capability and develop a survey instrument to measure it (Personal Finance Research Centre, 2005). This study also developed an *a priori* conceptual model of financial capability, which drew on the adult financial capability framework which was developed by the Financial Services Authority and the Basic Skills Agency (Basic Skills Agency, 2004), supplemented by a review of other research and literature. It identified three key elements that seemed to determine capable financial behaviours: knowledge and understanding, skills and confidence and attitudes.

These were considered to be influenced by a person's experience and circumstances, and by their personality. The report includes a model linking these various direct and indirect influences (see Figure 1-1).

Figure 1-1 Conceptual model of financial capability (Personal Finance Research Centre, 2005)



This model was then tested empirically through completely open-ended focus groups. The discussions held in these groups showed that people thought about financial capability primarily in behavioural terms, suggesting that the survey should be structured accordingly. Overall, it identified four discrete aspects of financial capability:

- Managing money - which was primarily concerned with being able to live within one's means.
- Planning ahead - which was required to cope with unexpected events and to make provision for the long term.
- Making choices - which involved being aware of the financial products that were on offer, and being able to choose those that were most appropriate to an individual's circumstances.
- And Getting help - which had two dimensions: self-reliance and using third parties.
  (Personal Finance Research Centre, 2005).

In other words, financial capability is what you actually *do* in contrast to financial literacy which puts greater emphasis on what you *know*.

A questionnaire was then developed through two waves of cognitive interviews to identify questions that best distinguished financially capable people from incapable ones. The focus groups and cognitive testing indicated that questions should have no bias against particular income or cultural groups. The questionnaire also included a small module of standard financial literacy questions (Financial Services Authority, 2006).

The resulting survey had to develop a method of scoring replies to behavioural questions that were scaled from least to most capable. After investigating the options, it was decided to use principal components analysis and to use the component scores (rescaled) to create an index of financial capability (Atkinson et al 2006). The survey analysis found that financial capability was a multi-faceted concept that could not be reduced to a single score. As the qualitative research had also shown, people could be capable in one domain and not in others. In total the principal components analysis identified five domains that resonate with the ones that emerged from the focus group analysis:

- Managing money: making ends meet
- Managing money: keeping track of finances
- Planning ahead for future events such as a loss of income and retirement
- Choosing appropriate financial products and
- Staying informed

Holzmann (2013) has contrasted this overall approach with the one used in financial literacy surveys, drawing attention to the fact that it makes no prior assumptions about what should be measured but, instead, determines this empirically. This, he argues, is in contrast to the financial literacy approach in which knowledge is the main area of concern and the approach to designing the content of surveys is based on what the researchers believe people ought to know.

Internationally, opinion has coalesced around these domains and the UK survey was replicated and/or adapted in a number of other countries, including Ireland (Financial Regulator, 2008), Canada, where the survey was carried out in 2009 and repeated in 2014 (Arrowsmith et al, 2006; Arrowsmith and

Pignal, 2007), the United States, carried out three times since 2009 (FINRA, 2016) and the Netherlands (CentiQ, 2008). The Dutch added questions that were designed to capture personality factors

The World Bank went a step further and repeated the entire empirical development phase across a range of low- and middle-income countries (Holzmann et al, 2013; Kempson et al, 2013a). This began with 58 focus groups across eight countries,[1] followed by two extensive waves of cognitive interviews in the same countries, and a survey that was administered in seven countries.[2] The detailed conceptualisation of financial capability that emerged from the focus groups was consistent across countries and bore a striking resemblance to the findings in the UK. There was, however, more emphasis on psychological factors. These were: time-orientation, impulsivity, achievement-orientation, social status (peer pressure), self-control, and altruism.

The questionnaire content, while primarily capturing behaviours, also included an (optional) module of traditional financial literacy questions, drawn from the OECD survey (OECD, 2013), as well as a module of questions measuring six different psychological factors that drew on established psychology scores (Kempson et al, 2013b). Three of these factors were included in the core questionnaire (time orientation, impulsivity and achievement orientation) the others were optional.

The World Bank analysis and score development used a principal components analysis approach (Kempson et al., 2013a). As in the UK, the analysis showed that it was not possible to create a single measure of financial capability. However, it also showed that it was difficult to create identical domains across such disparate countries. Instead, analysis was carried out at the level of discrete behaviours. These were:

- Budgeting/planning spending
- Monitoring finances
- Not overspending
- Living within ones means
- Making sure that unexpected expenses could be covered
- Saving
- Making informed financial decisions
- Choosing appropriate financial products (for a sub-set of financially included respondents only)

In addition, it found that the three core psychological factors (time-orientation, impulsivity and achievement-orientation) formed discrete components (Kempson et al, 2013a).

The World Bank questionnaire and approach has been used by a large number of other countries since the questionnaire and detailed methodological guidance was published (Kempson et al., 2013b).

As a footnote to this discussion, it should be noted that the OECD Expert Subgroup on the Measurement of Financial Literacy agreed that the terms 'financial literacy' and 'financial capability' *'could be used interchangeably as they were reflecting similar perceptions of the reality they aim to cover'* (OECD, 2010). This may reflect the confusion in the literature but is not helpful conceptually.

[1] Colombia, Malawi, Mexico, Namibia, Papua New Guinea, Tanzania, Uruguay and Zambia
[2] Armenia, Colombia, Lebanon, Mexico, Nigeria, Turkey and Uruguay.

This report, therefore, maintains the integrity of the conceptual differences between these two terms, using financial literacy to refer to knowledge and skills and financial capability to behaviours.

2.3. Behavioural economics

Shortly after policy makers shifted their focus from knowledge and financial literacy to behaviours and financial capability, some economists were drawing on psychology research to explain the discrepancy between actual consumer behaviour and the behaviour that standard economic theory is predicated on. From this, a new application of theory, behavioural economics, emerged (Kahneman and Tversky, 1979) and the efficacy of initiatives to raise levels of financial literacy questioned (Buss, 2009). Behavioural economists and others focussed on psychological factors as the key drivers of behaviour, which they believed were so deep-seated that they could not be modified by financial education (see for example, Garcia, 2013; Guzavicius, 2015; Willis 2008). Moreover, these factors were found to undermine information and knowledge resulting in systematic cognitive biases in decision-making in which people behave both 'irrationally' and contrary to their own knowledge and intentions (see for example Willis, 2009; Yoong, 2001).

Overviews of the literature have identified a number of psychological factors and how they affect financial decision-making (de Meza et al. 2008; Erta, 2013; World Bank, 2015). Some of the key ones are:

- *present–bias (time preference or orientation):* responding to urges for immediate gratification (self-control problems, procrastination) resulting in overvaluing the present over the future.
- *Loss-aversion:* placing greater importance on avoiding losses rather than acquiring gains.
- *Overconfidence:* believing that one's abilities are greater than the facts would objectively support; and that good events are more likely to happen than bad ones.
- *over-extrapolation:* making predictions on the basis of only a few observations, and, as a result, underestimating uncertainty.
- *use of heuristics*: simplifying complex decisions by adopting specific rules of thumb (heuristics).
- *herding, social validation or social proof (peer pressure)*– doing what other people are doing, usually to conform
- *confirmation bias*: seeking out or evaluating information that confirms one's preconceptions
- *Inertia or status quo bias:* sticking with the familiar

This has led regulators to take a behavioural approach to regulation - harnessing or getting round these biases rather than trying to modify them (see, for example, Financial Conduct Authority, 2015; Financial Markets Authority, 2016) and to a wider range of interventions to promote financially capable behaviours (Holzmann, et al, 2013).

2.4. Financial Well-being and Wellness

The most recent strand of research has concerned the general financial well-being of populations, as opposed to the more narrow focus on negative well-being outcomes, such as deprivation, financial stress or payment problems, which has drawn on the work of Townsend (1979) and Mack and Lansley (1985).

A number of surveys have been undertaken to measure the level of general financial well-being in populations (Delafrooz and Paim, 2013; Gutter and Copur, 2011; Prawitz et al, 2006). These are primarily based on subjective measures, following the literature on general health and well-being. There is also a body of research that focuses solely on measuring financial satisfaction (O'Neill et al 2005; Parrotta and Johnson, 1998; Robb and Woodyard, 2011; Vleav and Elliott, 2014). There is, however, no generally-agreed definition or method of measurement and questionnaire content has largely been developed normatively.

There are two studies - one by the Consumer Financial Protection Bureau in the USA and another commissioned by the Financial Literacy Australia - that are running in parallel with the research reported here and share with it an empirical approach to defining and measuring financial well-being. The three teams have been working in close collaboration although each has pursued its own research design. In addition, the UK Money Advice Service published an analysis of the results of the 2015 UK survey of financial well-being, which drew on the conceptual work reported in sections 3.2 and 3.6. It should, however, be noted that the questionnaire had not been designed with this analysis in mind and this imposed limitations on the analysis that could be done (Finney, 2016).

This body of work on financial well-being is discussed in more detail in Chapter 3 of this report.

Compared with financial well-being, financial wellness is a rather broader concept and is generally taken to mean financial satisfaction, financial status, financial behaviour, financial attitudes and financial knowledge (Joo, 2008; Gerrans, 2013). Hayes et al (2016) developed an index of financial wellness for the UK which included micro-economic and macro-economic measures. The micro-economic ones were: financial confidence and satisfaction; financial capability - short-term planning; financial capability - long-term planning; savings, assets and security; steering clear of financial difficulty and debt; financial inclusion; avoiding deprivation and hardship. The macro-economic measures were: the Gini coefficient of income inequality; GDP per capita and unemployment rate.

This report focuses on financial well-being rather than financial wellness.

2.5. Conceptual Linkages

There is a small body of research that investigates the determinants of financial well-being, but most of this is restricted in its coverage. There would appear to be no previous research that has looked across the board at the relative importance of behaviours (financial capability), knowledge (financial literacy) psychological factors and attitudes in determining financial well-being.

A larger body of research has, however, looked at the links both between behaviours and financial knowledge and between behaviours and psychological factors and attitudes. But, again, there is no research looking at how knowledge, psychological factors and attitudes interact in influencing behaviours.

2.5.1. Links between well-being, behaviours, knowledge and psychological factors

Three studies have looked at the links between behaviours and financial well-being. This suggests that three behaviours, in particular, are important.

- a propensity to spend money on non-essentials impulsively/ living beyond one's means*,* which decreased well-being (Delafroz and Paim, 2013; Gutter and Copur, 2011)
- risky borrowing/use of credit for day-to-day expenses*,* which also decreased financial well-being (Delafroz and Paim, 2013; Finney, 2016; Gutter and Copur, 2011)

- a propensity to save and plan for the future, which was associated with higher levels of financial well-being (Finney, 2016; Gutter and Copur, 2011).

Two of these studies also investigated aspects of budgeting and found that they had a *negative* correlation with financial well-being in regression analysis that controlled for the effects of other factors (Finney, 2016; Gutter and Copur, 2011). In other words, people who planned or monitored their spending had lower levels of financial well-being.

When these behaviours were controlled in a regression analysis, income, income and expenditure shocks, work status, age, housing tenure, and education level were also fairly consistently found to be associated with financial well-being (Finney, 2016; Gutter and Copur, 2011).

A Canadian study specifically focussed on the links between financial literacy (ie knowledge about financial matters) and financial well-being and found a positive correlation in regression analysis (Taft et al, 2013). In UK analysis, however, financial numeracy (based on standard financial literacy questions[3]) was not associated with the measure of short-term well-being when behaviours and other factors were taken into account. It did have an effect on long-term financial well-being, although this was a more unsatisfactory measure of well-being than its short-term equivalent (Finney, 2016).

No research was found that has investigated the links between the psychological factors identified in section 2.4 and well-being. The UK analysis of the financial capability survey, however, found that financial confidence was statistically significant in regressions predicting both long-term and short-term financial well-being - although the effect was greater on the second. A low tendency to spend was also significant in the short-term well-being regression (Finney, 2016).

2.5.2. Links between behaviours and financial knowledge

There is a small body of research that has looked at the relationship between financial knowledge and behaviours. For example, knowledge of financial concepts such as inflation or compound interest has been shown to be correlated with better financial decisions regarding financial planning and purchase of financial products (Hung et al. 2014; Lusardi and Mitchell, 2014). Other studies have investigated the links between financial knowledge and retirement saving (Jacobs-Lawson and Hershey, 2005), general saving and borrowing (Robb and Woodyard, 2011) and over-indebtedness (Gathergood, 2012).

However, research shows that the effectiveness of knowledge-based interventions in changing behaviour is mixed at best and, where there is one, the effect is generally small (Fernandes, Lynch, & Netemeyer, 2014; Hathaway & Khatiwada, 2008; Willis, 2009). And it is not entirely clear which way the causality runs (Hilgert and Hogarth, 2003).

Recent UK analysis looked at another aspect of financial literacy and found that it was not statistically significant in their regression models of 'active saving' and building resilience' behaviours, although it was for 'credit management', all other things being equal. But, counter-intuitively, the higher someone's financial numeracy level, the poorer their management of credit (Finney, 2016).

[3] Although called 'financial numeracy' the questions that made up this score were computational ones relating to inflation and interest rates that are often used as measures of financial literacy.

Following a review of research on the links between knowledge and behaviour, the Consumer Financial Protection Bureau concluded that:

> *… factual knowledge in and of itself is not sufficient to drive behaviour or behaviour change. Our review of existing literature suggests that the link between knowledge and behaviour is always mediated by individual characteristics like attitudes and non-cognitive skills, and by the context in which a decision is made or action taken* (Consumer Financial Protection Bureau, 2015).

In fact, a series of qualitative studies have shown that consumers considered it more important to know how to do things than to have knowledge of particular facts. Even so, attitudes and other psychological factors were considered more important still (Consumer Financial Protection Bureau, 2015; Fernandes et al., 2014; Kempson et al., 2013; Personal Finance Research Centre, 2005).

2.5.3. Links between behaviours and psychological factors and attitudes

As already noted in section 2.4, psychological factors have been found to undermine information and knowledge resulting in people behaving in ways that are contrary to their knowledge and intentions (Willis, 2009; Yoong, 2001). A large and growing body of behavioural economics research shows that there are clear relationships between particular cognitive biases and psychological factors and specific financial behaviours. These include:

- Locus of control and wealth accumulation, savings rates and portfolio choices (Cubb-Clarke et al. 2016)
- Impulsivity (self-control) and reported burden of borrowing (Gathergood, 2012).
- Impulsivity (self-control) simultaneously holding a credit card balance and low-yield liquid savings (Gathergood and Weber, 2014).
- Time-orientation and financial risk tolerance and retirement saving practices (Jacobs-Lawson and Hershey, 2005).
- Time-orientation and the accumulation of credit card balances (Benton et al., 2007).

Although the World Bank study included questions designed to measure key psychological factors these were not tested for their relationship with behaviours, but treated as an element of financial capability in their own right (Kempson et al., 2013a).

Other research has found a link between self-confidence (self-efficacy) and behaviours. It was one of the key predictors of 'active saving' and 'building resilience' behaviours and it was also a highly statistically significant predictor of 'managed credit use' but with more with moderate effects (Finney, 2016). It is, however, likely that self-confidence interacts with key psychological factors such as time orientation, loss aversion and inertia (for an overview of this evidence see Palameta et al., 2016). It has also been found to interact with knowledge (measured objectively). So that people with high levels of knowledge but low levels of confidence were more likely to have relatively poor outcomes in terms of managing financial commitments, making bill-payments, budgeting and managing credit use. Conversely people with high levels of self-confidence had better outcomes on these measures even if they were less knowledgeable. However, high levels of self-confidence did not overcome lack of knowledge when it came to saving and planning for the future (Palameta et al, 2016).

Specific attitudes to money management have also been found to be important determinants of behaviours. Having a saving orientation and financial prioritisation were both key predictors of 'active saving' and 'building resilience' and had large effects; while spending restraint and a saving orientation were highly statistically significant predictors of 'managed credit use' albeit with moderate effects (Finney, 2016).

2.6. Summary and Research Gaps

There is, then, a wide body of research relating to financial literacy, financial capability, psychological factors, and financial well-being, but there are some important gaps in our understanding.

There are generally accepted definitions of both financial literacy and capability, although only the financial capability definition has been determined empirically. As discussed in section 3.2 below there no consensus on how to define financial well-being.

There have been many studies seeking to measure financial literacy, but the content has been determined normatively and, consequently, there is little consensus about what should be measured. The measurement of financial capability, in contrast, has been widely informed by the empirical work undertaken by the Financial Services Authority (Personal Finance Research Centre, 2015). Rather fewer attempts have been made to measure financial well-being, and the content of surveys to date has not been determined empirically. The key exception to this is the qualitative work on how to measure financial well-being that has been undertaken by the Consumer Financial Protection Bureau in the United States (CFPB, 2015).

More importantly, these strands of research have tended to be carried out in isolation from one another, with few attempts to look at the linkages between them - or with the psychological factors that have been shown to be important drivers of behaviour.

3. Defining and Measuring Financial Well-being

3.1. Introduction

As we saw in the previous section, although there has been a large body of research relating to financial literacy, financial capability, psychological factors and financial well-being, there are some significant gaps. Notably, there is a lack of consensus and empirical evidence on how to define financial well-being and how it should be measured. Moreover, there is only fragmented evidence on the key drivers of financial well-being, and how, if at all, the other factors interact to influence it.

To fill these gaps, we supplemented a review of previous research with a re-analysis of transcripts from focus groups conducted for the two key studies of financial capability - by the UK Financial Services Authority (Atkinson et al, 2006; Personal Finance Research Centre, 2005) and the World Bank (Kempson et al, 2013).[4] These adopted an almost identical approach, using very open-ended topic guides to ask participants to describe a financially incapable person and then a capable one. Probes were then used at the end of the discussion to identify the importance of knowledge and attitudes as key drivers. In total eight focus groups were held in the UK and 58 across eight low-to-middle income countries in the World Bank study[5]. The groups covered all age groups and all income levels. The reason for re-analysing these transcripts was that the original analysis had conflated behaviours (financial capability) and outcomes of those behaviours (financial well-being) in their conception of financial capability. Our re-analysis sought to tease these out.

3.2. Developing a working definition of financial well-being

There is a diversity of existing definitions of financial well-being and most have been derived theoretically, often with reference to the literature on general health and well-being (Table 3.1).

Although there is no generally agreed definition, it is clear that they frequently include both subjective and objective dimensions and many also make reference to both the current financial situation as well as to future financial resilience. Some definitions explicitly refer to it as a 'state', others imply that it is a continuum.

The only detailed empirical work to define financial well-being has been undertaken by the Consumer Financial Protection Bureau (2015)[6]. Based on interviews with 59 consumers and 30 practitioners they explored both how people would define financial well-being as well as what they believed determined it. From the interviews with consumers, they concluded that financial well-being *'describes a continuum -ranging from severe financial stress to being highly satisfied with one's financial situation'*.

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[4] See Section 2.3 for further details of these two surveys

[5] Colombia, Malawi, Mexico, Namibia, Papua New Guinea, Tanzania, Uruguay and Zambia

[6] Running in parallel with our own work and that of the US Consumer Financial Protection Bureau is a study that is being conducted by the University of New South Wales for Financial Literacy Australia, that included qualitative research to develop both a definition and way of measuring financial well-being. At the time of writing this has not been published

Table 3-1 Definitions of financial well-being

Author	**Definition**	**Link/reference**
Goldsmith, 2000	Financial adequacy and safety of individual or family that protects the person against economic risks such as unemployment, illness, bankruptcy, poverty and destitution in retirement.	Goldsmith, E. B. (2000). *Resource management for individual and family*. Belmont, CA: Wadsworth learning.
Prawitz et al, 2006	The level of stress and well-being emanating from one's personal financial condition	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2239338
IFMR Finance, 2011	The state in which a household can optimally choose patterns of consumption over time and in uncertain states of the world. In other words, a household's ability to grow, manage liquidity and weather downturns	http://www.ifmr.co.in/blog/2011/02/14/developing-an-index-for-measuring-financial-well-being-in-a-geography/
Academic Taft et al, 2013	The material and non-material aspects of a person's perception from their financial status, improving their living standards and includes perceptions such as: ability to meet the needs, feeling safe, feeling comfortable and satisfied with the income and the award distribution system.	http://www.ccsenet.org/journal/index.php/ijbm/article/view/24940
Zaimah et al, 2013	The subjective perceptions and objective indicators of individuals' personal financial status.	https://www.questia.com/library/journal/1P3-3165715591/financial-well-being-financial-ratio-analysis-of
Vlaev and Elliott, 2013	Having enough money left over for non-essentials to live your life	https://link.springer.com/article/10.1007%2Fs11205-013-0462-0
Australian Unity, 2014	Both a subjective measure of how satisfied a person feels about the state of their finances, and an objective assessment of their financial position	http://www.australianunity.com.au/about-us/wellbeing/auwbi
Vosloo et al, 2014	Objective and subjective aspects that contribute to a person's assessment of his/her current financial situation	https://www.cluteinstitute.com/ojs/index.php/IBER/article/view/8934/8893
Barclays, 2014	Being and feeling financially healthy and secure, today and for the future	https://wealth.barclays.com/global-stock-and-rewards/en_gb/home/research-centre/financial-wellbeing.html
National Credit Union Foundation, 2015	Where people feel in control of their day-to-day and month-to-month finances; have capacity to absorb financial shock; are on track in meeting financial goals; and have the financial freedom to make choices that allow them to enjoy life.	http://www.cutimes.com/2015/03/08/defining-financial-well-being-and-measuring-impact
Consumer Financial Protection Bureau, 2015	A state wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future, and is able to make choices that allow enjoyment of life.	http://files.consumerfinance.gov/f/201501_cfpb_report_financial-well-being.pdf

They identify four aspects to this:

- having control over day-to-day, month-to-month finances;
- having the capacity to absorb a financial shock;
- being on track to meet your financial goals; and
- having the financial freedom to make the choices that allow you to enjoy life.

Despite identifying financial capability as a continuum, they define it as:

> *… a state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future, and is able to make choices that allow enjoyment of life.*

Our reanalysis of the 58 focus groups showed that people thought of financial well-being in mainly (but not exclusively) objective terms. Across countries, age groups and income levels it was considered to mean not only being able to meet all one's regular commitments but to be able to do so with sufficient margin that there would be money left from a regular income for non-essentials too. Moreover, financial well-being was also considered to mean having resilience to meet future needs too. It was also clear that it was seen as a continuum. The emphasis placed on the future resilience dimension, varied across the income groups. For the very poorest living in low-income countries it was a distant aspiration and was over-shadowed by the desire for short-term well-being, and in some cases simply by an ability to meet one's commitments and feed the family. In the context of a high-income country, such as Norway, such caveats would not apply.

These elements can be summarised in the following succinct working definition for high- and middle-income countries:

> *The extent to which someone is able to meet all their current commitments and needs comfortably, and has the financial resilience to maintain this in the future*.

3.3. Developing a measure of financial well-being

There are other indexes of financial well-being, that have been based on the discourses relating to health and general well-being. The most comprehensive of these was developed by Prawitz et al. (2006) in South Africa and is based on eight questions. Most of these were subjective measures, although they include questions on how often people find they are just about getting by, how often they lack the money for 'treats' and how confident they are that they could meet an unexpected expense. There is, therefore, some synergy with the definition above. Factor analysis was used to create an overall scale. Others have used Prawitz's scale in the work they have done (Gutter and Copur, 2011; Taft et al. 2013).

Delafrooz and Paim (2013) in Malaysia have developed a nine-item measure of 'financial wellness' that actually has a lot in common with the content of the Prawitz index of well-being. It mainly comprises subjective measures, although it does include questions regarding frequency of running out of money before pay-day and of being unable to pay bills. Other objective measures were included in a measure of 'financial problem items' which was treated as a potential determinant of financial well-being. Again, factor analysis was used to create the overall well-being score.

Bray et al. (2001) designed a set of questions measuring financial well-being that could be incorporated into surveys in Australia. They identified four types of outcomes which implicitly measure financial well-being: 'financial outcomes'; 'hardship/stress'; 'material affluence' and 'subjective well-being'. The questions they used to capture these were identified from existing surveys and the ones capturing 'financial outcomes' covered inability to meet commitments, ability to raise $3,000 in a week and how they would do so; subjective assessment of household financial situation; level of savings compared to a year ago and total burden of housing costs. Most of these had scaled replies. The 'hardship/stress' questions were drawn from material deprivation surveys to identify the number of items people had gone without because they could not afford them. 'Material affluence' was measured with a small number of questions that had a variety of response formats. Finally, 'subjective well-being' was measured using three questions all with a 10-point scale. Given the variety of formats used it is not easy to see how the questions across these four types of outcome could be put together in a single scale. Despite this, they were used in a factor analysis that did not provide a clear set of factors, and many of the hardship and material affluence questions dropped out of the analysis (Bray et al., 2011).

The key piece of published *empirical* work in this area is the scale developed by the Consumer Financial Protection Bureau (2017), which, like its definition, was based on qualitative interviews with consumers and practitioners[7]. To design the questions to measure financial well-being they returned to the four elements that had been identified by consumers and then held cognitive interviews to develop questions that were consistently understood and also correlated with one another so that they could be used to create a single score. The resulting ten questions that comprise the CFPB measure are given in the box below.

Questions that make up the CFPB Financial well-being scale

How well does this statement describe you or your situation? (*5-point scale from completely to not at all*)

1. I could handle a major unexpected expense
2. I am securing my financial future
3. Because of my money situation, I feel like I will never have the things I want in life
4. I can enjoy life because of the way I'm managing my money
5. I am just getting by financially
6. I am concerned that the money I have or will save won't last

How often does this statement apply to you? (*5-point scale from always to never*)

7. Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month
8. I have money left over at the end of the month
9. I am behind with my finances
10. My finances control my life

It can be seen that these questions are mainly subjective measures of financial well-being, in common with previous scales. Each question was scaled, so allowing for the measurement of financial well-

[7] Again, it should be noted that the research in Australia was running in parallel with our own and had not reported at the time of writing

being on a continuous scale, using Item response Theory methods. The questionnaire did include objective measures, but these were identified as potential determinants of well-being.

Our own reanalysis of the focus group transcripts, in contrast, suggested that a scale of financial well-being should be based primarily on objective measures. This would include questions to capture:

- The extent to which people are able to meet all their financial commitments. And because people respond differently to a lack of resources for essential needs, this needed to be captured in a range of ways.
- The extent to which they have money left over after meeting essentials.
- The extent to which they would be able to deal with economic shocks in the future.

Questions used to create our financial well-being scale

1.How often do you run short of money for food or other regular expenses? (frequency scale)

2.How often you are overdrawn on your bank account? (frequency scale)

3.Which one of the following statements best describes how well you are able to pay your bills and credit commitments at the moment? (Without any difficulty; It is a struggle from time to time; It is a constant struggle)

4. In the past 12 months, how often have you been unable to pay bills or loan commitments at the final reminder due to lack of money? (frequency scale)

5. How often do you have any money left over after you have paid for food and other regular expenses? (frequency scale)

6. How would you describe your current financial situation? (a 5-point scale from very bad to very good)

7. How confident are you about your financial situation in the next 12 months? (5-point scale from not at all confident to very confident)

8. How in control of your finances do you feel you are? (5-point scale from very little/no control to totally in control)

9. If, tomorrow, you had to meet an unexpected expense that is equivalent to a month's income for your household, how much of it would you be able to cover from money you have available?

10. Would you need to borrow, overdraw your account or use a credit card to meet an unexpected expense of a month's income? (scale 'all of it; some of it; none of it)

11. If your income fell by a quarter, for how many months could you meet all your expenses without needing to borrow?

13.Thinking about the total income of your household how many month's income do you have in savings?

The questions measuring financial well-being objectively that we used were drawn primarily from the World Bank study of financial capability (Kempson et al., 2013b), as they had built on the questions developed for the original UK survey and had also undergone extensive cognitive testing. However, since the World Bank questionnaire was not designed with the measurement of financial well-being in mind, it lacked any subjective measures. For these, we drew on the questions used by Parawitz et al. (2006). Reflecting the views of focus group respondents just discussed on the relative importance of objective and subjective measures, the questionnaire included ten objective measures and three subjective ones.

The questions that make up the well-being scale are given in the box above.[8] In other developed countries, it would be appropriate to ask respondents about levels of financial provision for their old age. Such questions were not included in the Norwegian survey because the extent to which people need to make their own provision varies greatly. Older public-sector workers can expect to retire on a very adequate pension from the State, although recent changes mean that younger ones will need to start making some provision themselves. Most private sector workers do need to have some form of personal provision.

The other points that arose from the focus groups were the extent to which people would be able to meet the costs of giving their children the education and life chances they desired for them and the extent to which people would be able to meet the costs of a major anticipated expense. These were not included in the suite of questions because neither applies to the whole population. Not everyone has young dependent children when they are surveyed, and many people have no anticipated major expense.

Each question was scaled so that it could be used in a principal component analysis (PCA). The intention was that an overall measure (and any sub-measures) would be created using the PCA scores, following the approach used in the UK and World Bank surveys of financial capability (Atkinson et al., 2006; Kempson et al., 2013a) and by others (Delafrooz et al, 2006; Prawitz and Paim, 2013).

3.4. Identifying and measuring the direct influencers of financial well-being

Summarising the information in Section 2.6.1, there is some previous quantitative research that has looked at the links between behaviours and financial well-being, which suggests that three, in particular, are important:

- A propensity to live beyond one's means
- Risky borrowing/ credit use for daily living expenses
- A propensity to save and plan for the future

There is also one study that finds a correlation between financial well-being and financial knowledge and one that finds a link between financial numeracy and long-term (but not short-term) well-being when behaviours have been controlled for. There is limited research on the role of attitudes in determining financial well-being; one study found that financial confidence was important determinant of both short-term and longer-term financial well-being, after taking behaviours into account and a positive attitude to spending was a determinant of short-term well-being only. There would seem to be no research that has investigated the links with key psychological factors (see section 2.6.1 above).

[8] The full questionnaire can be found in appendix 1.

The most systematic work of the potential linkages between financial well-being and behaviours (financial capability), knowledge and skills (financial literacy) and 'personality traits' is the qualitative research that was undertaken by the Consumer Financial Protection Bureau (2015). They discussed each of these three areas in interviews with both consumers and financial practitioners to understand how they were perceived to influence financial well-being and their relative importance. Taking behaviours first, the ones mentioned in the interviews were categorised into four 'thematic groups': effective routine money management; effective financial research and knowledge seeking; financial planning and goal setting, and following through on financial decisions (interpreted as actually saving or investing money rather than merely intending to do so). Knowledge, skills and personality traits were thought to have a more indirect effect, through their influence on behaviours. Beyond these attributes of the individual, the social and economic environment was also considered to play a key role in determining financial well-being (CFPB, 2015).

The reanalysis we conducted of the focus group transcripts from the UK and World Bank studies was unequivocal in indicating that behaviours are the main determinants of financial well-being. In particular, the key behaviours identified were:

- Planning expenditure against income
- Prioritising spending on essentials
- Disciplined spending
- Living within your means/ not borrowing for essentials
- Keeping track of spending and money available for spending
- Active saving
- Planning for unexpected expenses or an income fall
- (Planning for old age)
- Proactively seeking information and checking product features before choosing a product to buy
- Gathering information before making a financial decision

Since the World Bank behaviour questions built on those from the UK study and had been subjected to extensive cognitive testing, they were used in our questionnaire with minimal editing to make them applicable to the Norwegian context. All were scaled and therefore suitable for use in a principal components analysis (Kempson et al. 2013b).[9]

Psychological factors and attitudes were also considered to be important by focus group participants, but it was unclear whether they have a direct influence on financial well-being, act indirectly through behaviours or a mixture of the two. Knowledge, on the other hand, was considered much less important. It was not thought to directly influence financial well-being and, at best, to influence behaviours. These points are discussed further in the following section.

Finally, participants in the focus groups were quite emphatic that financial well-being is determined by social and (especially) economic environmental factors that largely lie outside the control of the individual. For example, there was a clear view that while income and income changes may not influence behaviours, they certainly mediate the effect that behaviours have on financial well-being. So, someone who is living on a very low income may not have a high level of financial well-being despite

[9] See appendix 1 for the full questionnaire

displaying a high level of financially capable behaviours. The extent to which they have financial demands placed on them by others or can call on help from others was also felt to be very important.

3.5. Identifying and measuring the indirect influencers of financial well-being

As has just been noted, our own qualitative analysis, and that of the Consumer Financial Protection Bureau, suggested that knowledge, skills, psychological factors and attitudes are likely to have an indirect effect on financial well-being. This section, therefore, focuses on their influences on behaviours.

Taking knowledge first, the findings of previous research are, at best, equivocal about the role that financial knowledge and skills play in determining various behaviours and, any effects found tend to be small (see section 2.6.2). In part, this variation may be attributable to a wide diversity in the types of knowledge and skills being studied.

The qualitative research conducted by the Consumer Financial Protection Bureau found that both consumers and practitioners were far more likely to mention the importance of knowing *how* to do things rather than knowledge of particular facts as a potential influencer of behaviours. As we discuss below, the link between knowledge and behaviour was thought to be mediated by personality traits (CFPB, 2015).

Similar findings emerged from our own re-analysis of the UK transcripts, with group participants identifying a number of illustrations of knowledge having no impact on behaviour because it was over-ridden by psychological factors. The World Bank groups, which were all held in low- to middle income countries, stressed that people can exhibit capable behaviours with minimal knowledge of financial matters. In contrast, experience with managing money was felt to be far more important and that people learn by doing in both sets of focus groups.

Taken together, this qualitative evidence suggests that knowledge may have a small effect on behaviours, but that it is mediated or even countermanded by psychological factors. These are complex relationships that have not been explored quantitatively.

It was difficult to find a set of knowledge questions that prior research suggested should be included in our questionnaire. In the end, we used a mix of questions including ones on knowledge of how to manage money; knowledge of the financial marketplace and experience of managing money, all of which were scaled for use in a principal components analysis. As we note later, this proved to be the weakest part of the questionnaire.[10]

Finally, we come to the effect that attitudes and psychological factors themselves have on behaviours. Previous research (section 2.6.3) has found that factors such as locus of control, impulsivity/self-control, time-orientation and self-confidence/self-efficacy were all predictors of saving and borrowing behaviours. Attitudes to money management were also important.

The Consumer Financial Protection Bureau research suggested that personality traits (including attitudes and non-cognitive skills) seem to play a role in mediating the link between knowledge and behaviour. The key traits identified in the research include: internal frame of reference (locus of

[10] See appendix 1 for the full questionnaire

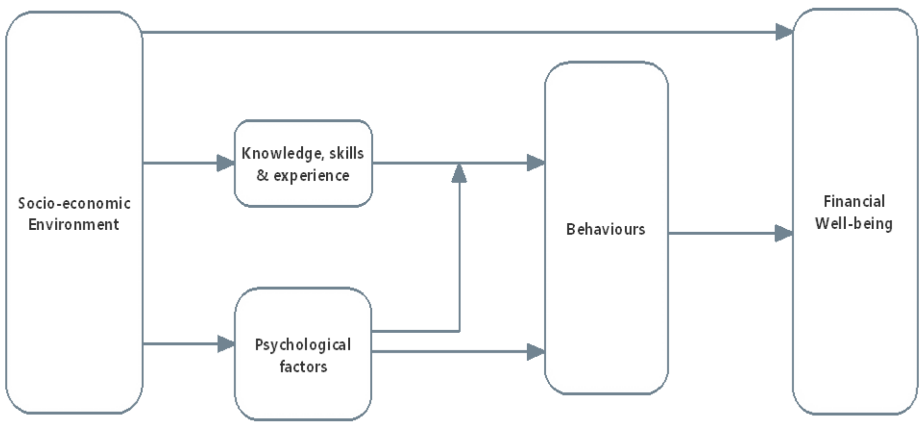
control), perseverance, executive functioning (being a planner or having self-control) and financial self-efficacy (or confidence in their abilities). (CFPB, 2015)

The UK focus group reanalysis certainly found that attitudes to managing money were important and that they could negate the effects of knowledge. The questions derived to capture these attitudes were then tested cognitively. But it was the World Bank focus group transcripts that provided the richest source of evidence on psychological traits. The key ones identified included: self-control; time-orientation; impulsivity; achievement-orientation; social status; action-orientation, and locus of control. The resulting survey drew on established psychology scales to create questions to capture these factors, which were then subject to extensive cognitive testing. Our questionnaire, therefore, incorporated the scaled questions used in these two surveys.[11]

3.6. A conceptual model of financial well-being

The general picture that emerges from the previous section is that they key drivers of financial well-being are behaviours and social and economic environmental factors. These, in turn, are determined by psychological factors (such as locus of control, impulsivity self-control and time orientation) and attitudes to spending, saving and borrowing; knowledge and experience have a much smaller effect or none at all.

Figure 3-1 Financial well-being: conceptual model



From this, we have produced a diagrammatic representation of these direct and indirect determinants of financial well-being. The behaviours box approximates to *'financial capability'*; the knowledge, understanding and experience one to *'financial literacy'*. It should be noted that the arrows indicate the main influences only, in order to keep the diagram simple. The sizes of the four boxes on the left-hand side of the diagram indicate the likely relative importance of each set of factors, for example, that attitudes and psychological factors play a greater role in determining behaviours than knowledge. This a priori model guided the analysis in the sections of this report that follow.

This model has much in common with the model that was developed, independently, by the Consumer Financial Protection Bureau. Both view behaviours and social and economic environmental factors as the key drivers of financial well-being, although the CFPB model sees the latter as being mediated through 'available opportunities'. In our view, the external environment can act in both positive and

[11] See appendix 1 for the full questionnaire

negative ways and has a direct influence on well-being as well as an indirect effect through behaviours. Both models treat knowledge and skills and attitudes and psychological traits as having an indirect effect on well-being, through their influence on behaviours. The CFPB model includes a third factor alongside these, which they call 'decision context' - how a particular decision is presented. This is included within the social and economic environmental factors in our model.

3.7. Overview and testing the model

From a qualitative reanalysis of 58 focus groups, together with a review of existing research we have devised both a working definition of financial well-being and an *a priori* model of its determinants. In the following chapters, we report preliminary analysis that was designed to test both of these, using survey data that was collected for this purpose. Chapter 4 focusses on the definition, while in Chapter 5 we report the preliminary testing of the model.

4. Methodology: Identifying the Key Components

4.1. Introduction

The conceptual model described at the end of the previous chapter (in figure 3-1) provides a framework for the measurement financial capability and well-being. It also lends itself to testing, in respect of the relationships between the different domains in the model, and in particular, the nature and strength of the hypothesised influence of the financial capability domains on financial well-being. In Chapter 5, we seek to test aspects of the model empirically, to identify how well the financial behaviours, in particular, explain financial well-being, and how well different financial knowledge, skills and experience and psychological factors explain financially capable behaviours in turn. First, however, it was necessary to collect the data needed to test the model. This chapter, therefore, describes how the data were collected and how the resulting components of financial capability which underlie each of the domains were derived.

The chapter starts by summarising the survey methodology, including the questionnaire design. First, the variable derivation and allocation are described, followed by a description of the procedures used to identify and construct the components. Next, the components and variables used in the analysis in Chapter 5 are described. It serves both as a documentation of how the components were composed empirically, and as a wider description of how the variables in the analyses are defined. The questionnaire on which the definitions are based, can be found in Appendix 1.

4.2. Design of the survey

The fieldwork for the survey was undertaken in October 2016, using Gallup's internet panel. A total sample of 2.058 respondents from across Norway was produced, and these were weighted by gender, age, education and place of residence to be representative of the adult population of Norway.

The questionnaire designed specifically for this study included approximately 90 questions across six sections and was supplemented by standard socio-demographic questions. The questions included as part of the special module were designed to cover all domains in the theoretical model described in the previous chapter, and to do so sufficiently to enable sub-domains (i.e. components within these domains) to be identified and constructed. Crucially, the questions were designed to produce individual measures (or items) for further analysis, which were scaled; that is, providing continuous or interval-level data.

4.3. Deriving financial capability components

A Norwegian survey was designed to capture the different aspects of financial capability and wellbeing defined in our a priori conceptual framework. Our approach to deriving components of financial capability and wellbeing based on the survey questions involved two distinct but related stages:

- Variable derivation and initial allocation against the conceptual framework.
- Identification and construction of the underlying components within the different levels of the framework.

After an initial review of the data, only valid cases were included in the final data set. Valid cases were defined as those who responded using meaningful responses to at least 15 questions from the bespoke financial capability module (resulting in the exclusion of 15 cases) and for whom a measure of total income could be derived (excluding 21 cases). Components were derived for only the remaining 2,013 valid cases.

4.3.1. Variable derivation and allocation

Variable derivation involves the cleaning of each survey variable relevant to the financial capability framework to make them suitable for use in analysis to identify and construct components in the next stage. Crucial to this, every variable considered for the analysis must include all valid cases in the sample.

As a key objective of the questionnaire design, individual survey questions were asked of all respondents in most instances. Therefore, for these variables, all respondents were represented in the data, whether by a meaningful pre-coded response or a ‘don’t know’ response. In other instances, we used a sequence of questions with filtering within the questionnaire to create a survey variable). In these instances, the first stage of cleaning involved re-basing the survey question to include all respondents. Sometimes this required creating a new category for the missing respondents which represented the highest or lowest level of financial capability, depending on how the question was routed. In other cases, it involved including missing respondents in an existing response category; the most relevant one.

We additionally avoided including more than one variable routed from any same initial question. These would, by definition, share a common category and introduce a problem known as multi-collinearity. Multi-collinearity would have skewed the analysis at the next stage and made interpretation of the resulting components problematic.

It is also crucial to the analysis in the next stage that the response categories of all the variables used are scaled or at least ordered. This has been a shortcoming of some of the previous research discussed in the previous chapter. Most survey variables were already designed in this way, but some needed to be derived or re-constructed to take this into account. Additionally, we recoded valid missing responses (such as ‘don’t know’ and ‘prefer not to answer’) to the most relevant meaningful response category. Typically, this was a middle value within the scale, or the most common (‘modal’) value. This was intended to be parsimonious.

We also re-ordered the response categories wherever necessary to ensure that a low score corresponded to low capability and a high score to high capability. In some cases, this involved the wholesale reversal of the order of the response categories. This would facilitate the interpretation of the components.

In the final part of this stage of the derivation process, the resulting analysis variables were allocated provisionally to the relevant level and element of the conceptual framework, for example, a behaviour or knowledge and experience. For the small number of variables that were of potential relevance to more than one level of the framework, they were provisionally allocated to both.

4.3.2. Identification and construction of components

We used Principal Components Analysis (PCA) to both identify and construct financial capability components based on the survey variables. PCA is one of several analytical techniques which explore the patterns occurring naturally within the data. It looks across respondents’ answers to identify commonality in their answers to the different survey variables, and reduces variables to underlying components. PCA is one such technique which is suitable for exploratory analysis, where there are no prior assumptions about which particular variables relate well to each other. It is also the most robust of these techniques.

We applied PCA to the variables cleaned and derived in the previous stage. All analysis was undertaken *within* each level of the conceptual framework in turn. As such, we assumed *a priori* (based on the conceptual model) that these variables related to a particular level but not what the particular components might be within that level. We undertook several suites of PCAs: one suite per level.

4.3.3. Identifying components

For each level of the framework, identifying the components was an iterative process. First, all variables identified within a level were entered into an initial PCA. We used the results of the initial PCA (which did not specify how many components to return) against diagnostic criteria to identify the optimal solution.[12] We then re-ran the PCA requesting the number of solutions indicated by the optimal solution and interpreted the resulting provisional components based on the 'loading' of the variables on each returned component. Loading is a measure of the correlation of the observed variable with the underlying component, and is given by the structural coefficient.

Our interpretation of the components at this stage indicated the poor fit of some variables. We reviewed these variables closely and removed some of them entirely from our variable pool on the grounds that their derivation or question wording had not worked as intended. Others were re-considered for other levels of the conceptual framework. After removing or moving these variables, we undertook the same process again – for all level of the framework – of first running a PCA, and then re-running it to request the optimal solution indicated. Interpretability of the resulting components remained important, as did ensuring that components were indicated by more than one variable. In order to meet these requirements, we repeated the process of reviewing and re-allocating variables for some levels of the framework where appropriate.

When we were satisfied that we had interpretable and meaningful solutions, we identified and extracted the higher-loading variables for each component in turn.[13] We tested the reliability and sampling adequacy of the data for each subset of variables.[14] We also re-ran a one-component PCA for each subset of variables to check that the results remained intuitive.

The exception to this iterative approach was for five of the six psychological determinants, such as time orientation. For these, the survey variables (three for each) were informed directly by existing, validated psychological scales. As such, these were explored in their defined sets and each set was found to reflect the same construct, also demonstrating strong reliability and sampling adequacy.

4.3.4. Constructing components

With the components now defined, we constructed and rescaled them so that they took on a potential score ranging from a true minimum of 0 to a true maximum of 100. For ease of interpretation, an

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[12] Diagnostic criteria included: explained variance, eigenvalues, scree plot and Monte Carlo parallel run.
[13] We used a threshold of 0.30 as our guide for considering a variable to be important to a component.
[14] Using the Cronbach's alpha and Kaiser-Meyer-Olbin (KMO) statistics respectively.

absolute scale like this is desirable. It also allows for comparisons in average scores between components.

However, PCA (and its related techniques) describe component scores on relative scales (respondents relative to each other, indicated by standard deviations from a mean of zero). To address this, for each component, we force-coded a 'fake' case to score the minimum score on each variable contributing to each component in turn, and another to score the maximum. The PCA was re-run to include these two minimum / maximum cases, and we re-scaled the resulting scores between 0 and 100,[15] calculated based on the relative scores for these two cases. The two fake cases were then removed.

4.4. The components: empirical results

4.4.1. Wellbeing components

Our available wellbeing measures encompassed those relating to current and short-term wellbeing as well as longer-term wellbeing. They also included more objective measures, such as borrowing to income ratio or how long someone could cover a fall in their income, and subjective measures such as someone's confidence in their current financial situation (see section 3.3 and figure 3.2).

The PCA indicated that two or three components based on these measures were optimal. After considering both in full, we decided to take the three-component solution forward because it produced the most intuitive and policy-relevant solution, although it was not the clearest solution in data (statistical diagnostic) terms. Not all measures considered fitted within these components. One measure, the total borrowing-to-income ratio did not load strongly onto any component and so was removed altogether. We identified two possible reasons for this: it may not be a measure of well-being but is better included as a behaviour; it combines both secured and unsecured borrowing, which has been corrected for the 2017 questionnaire. The resulting, final components were:

- Meeting commitments
- Feeling comfortable (which is heavily influenced by subjective measures)
- Resilience for the future

These comprised three, four and four individual measures respectively. In the revised questionnaire for 2017, there are additional objective measures and it will be interesting to see if the subjective ones still cluster together or that the objective measures add to the existing components. In other words, we will be able to identify what is driving the clustering of particular measures: their nature, or their subject content.

The PCA analysis also strongly indicated a one-component solution for financial wellbeing as a whole, which included all 11 of the measures represented in the three financial wellbeing components. This

[15] Which takes the respondent's score, subtracts the minimum possible from this, and divides this by the difference between the maximum and minimum possible scores, and then multiplies the result by 100.

Table 4.1 Financial well-being. Loadings of component Measures. N=2013. Norway 2016

Meeting commitments		Structural coefficient
b3	No money for food and expenses	0.56
b18	Ability to pay bills	0.59
b19	How often payment problems at the final reminder due to lack of money	0.58
Feeling comfortable		
b1	Money left over	0.47
a2	How is your current financial situation	0.54
a3	How confident are you about financial situation in next 12 months	0.52
a4	How much control of finances do you feel you have	0.47
Resilience for the future		
c3	How much of an unexpected expense equivalent to one month's income	0.54
c4	How much would need to borrow to cover unexpected expense	0.53
c5	How long could cover fall of income by a third without having to borrow	0.44
c10	Savings in terms of number of month's income	0.49

explained 51% of the total variation in people's responses to the questions considered. Again, the borrowing-to-income ratio was not included in this. We have retained this component – overall financial wellbeing – for certain analyses. The results are shown in Table 4.1 above.

4.4.2. Identifying the key components of behaviours

The behavioural domain comprised the largest number of available measures, 21 in total. This reflects the importance we placed on different aspects of individuals' behaviour in our conceptual model, and the range of financial domains in which individuals can act (as identified in the previous literature, reviewed in section 2.3). Examples included money management, saving, borrowing, and being an

Table 4.2 Behaviours. Loadings of component Measures. N=2013. Norway 2016

Spending restraint		Structural coefficient
b8	Lack of money because high consumption	0.61
b20	Impulsive, buy things I cannot afford	0.60
b24	I am more of a saver than a spender	0.52
Active saving		
c1	How often save money to cover unexpected	0.47
c6	Try to save money for the future	0.52
c7	Try to save money regularly	0.48
c8	Make sure I always have money saved	0.52
Not borrowing for daily expenses		
b10	How often use credit for food and expenses	0.62
b11	How often borrow money to pay off debts	0.59
b16	How often are you overdrawn	0.52
Planning how you use your income (budgeting)		
b5	How often planning how to use the income	0.57
b6	How exactly do you plan	0.58
b7	How often do you keep to your plan	0.59
Keeping track of money		
b12	Know how much money spent last week	0.51
b13	Know how much money in bank account	0.58
b14	How often check account	0.45
b15	In what ways do you check account	0.44
Informed product choice		
d4	How often check that you have the best product	0.40
d6_7	Information search before buying products	0.56
d8	How carefully checked terms and conditions	0.59
d12	Always get informed before making financial decisions	0.41

informed user of financial services (see Appendix 3 for the full questionnaire). Reflecting this, a six-component solution was clearly indicated as the optimal solution. As shown in Table 4.2 above, these components were:

- Spending tendency
- Active saving
- Borrowing for day-to-day expenses
- Planning how you use your income
- Keeping track of money
- Informed product choice

In this instance, a single component to reflect respondents' overall behaviour was not supported by the data. Again, this most likely reflects the diversity of these behaviours and individuals' capacity (means) and disposition to undertake them. This is consistent with the identification of several separate domains in previous studies, discussed in the previous Chapter.

4.4.3. Identifying the key components of knowledge and experience

Our in-depth review of the available data resulting from our questionnaire identified ten individual measures related to someone's financial knowledge and experience. This was less than we had originally intended when we designed the questionnaire. However, initial analysis of the data helped us identify clearly where questions which we had expected to relate to knowledge and experience did not do so in practice, and we were instead able to reallocate some of these questions to other levels of the conceptual model. In other cases, common base categories made the inclusion of measures problematic (collinearity, as described above). As such, better measures to capture knowledge and experience are needed, in particular, to distinguish knowledge about financial products, knowledge about money management, and experience of each of these. These changes were made to the revised questionnaire that was used to collect new data in 2017.

Table 4.3 Knowledge. Loadings of component Measures. N=2013. Norway 2016

Knowledge of product marketplace		Structural coefficient
d10	Not enough knowledge about savings products to choose	0.46
d11	Have enough knowledge to chosse lending products	0.51
d13	Level of knowledge of how to use a price comparison website...	0.48
d14	Level of knowledge of how to compare insurance products	0.54
Knowledge of managing money to reduce risk		
b23	I know how to plan my spending against my income	0.36
d15	A high-return investment is also likely to be high risk	0.66
d16	You can reduce risk by saving into more than one account	0.66
Broad experience of money management		
d1	Number of products held	0.64
d5	Number of products purchased in last 3 years	0.65
e1_4	Important role in money management andfinances	0.41

Nonetheless, the measures we did have available to us produced a clear three-component solution, producing policy-relevant and interpretable components. These were:

- Knowledge of product marketplace
- Knowledge of managing money to reduce risk
- Broad experience of money management

Each component comprised three or four individual measures, as shown in Table 4.3 above.

4.4.4. Identifying the key components of psychological influence

When considering the psychological influence of different factors in our model, we distinguished the more general psychological factors, which can relate to many aspects of people's lives, from those which relate specifically to finance. We took a slightly different approach to producing five of our components, which represent the general psychological factors in our model:

- Time orientation
- Impulsivity
- Social status
- Self-control
- Locus of control

These components were constructed in turn, using PCA, based on the three measures included for each. These measures had been included in our questionnaire based directly on existing, validated psychological scales. Their composition is shown in Table 4.4 below.

In addition to these measures, four measures designed to reflect people's attitudes to money were

Table 4.4 Psychological factors. Loadings of component Measures. N=2013. Norway 2016

Time orientation		Structural coefficient
f1	Long term thinking	0,51
f2	Live for the present	0,65
f3	The future will take care of itself	0,57
Impulsivity		
f4	Doing things without giving them much thought	0,60
f5	I am impulsive	0,61
f6	Saying things without thinking them through	0,52
Social status		
f7	I care about how other people see me	0,61
f8	I am concerned about social status among people I know	0,62
f9	I want other peole to respect me	0,49
Self control		
f10	I am good at resisting temptation	0,61
f11	Difficult to break undesireable habits	0,52
f12	I am always in control of my actions	0,60
Locus of control		
f13	I can pretty much determine what happens	0,61
f14	Financial situation largely out of my control	0,51
f15	When I make plans I do everything I can	0,61
Attitudes towards spending, saving and borrowing		
b25	Prefer buying things on credit rather than save	0,55
b26	Rather cut back on spending than use credit card I could no...	0,45
c2	Prefer to spend rather than save up for unexpected	0,53
c9	More satisfying to spend than save	0,47

included in the survey. These related, for example, to respondents' spending or saving orientations. In PCA, all four measures were found to strongly indicate one component only underlying these. This was interpreted as:

- Attitudes towards spending, saving and borrowing.

The measures making up this component are also shown in Table 4.4.

4.5. Social and economic environment

Our survey enabled us to produce a range of socio-demographic economic variables by which to describe and categorise individuals. These are used alongside the components of financial capability and well-being in the analysis presented in the next chapter. These are listed, along with the components in Appendix 3). We additionally explored the role of area-based (aggregate) characteristics, such as average household income in different administrative regions of Norway. Since none of these were significant in our subsequent analyses, we have not included these in the findings presented in Chapter 5, and do not discuss them further.

4.6. Summary

In order to test the conceptual model, and the relationships between domains which it identifies, we have undertaken a national, representative survey of adults in Norway to measure different aspects of these domains. We have subsequently identified – using an empirical, data-driven approach – what these aspects are based on the data from this survey.

We were able to construct a single measure of financial well-being as well as three sub-measures: meeting current financial commitments, feeling comfortable financially and having financial resilience for the future. These sub-measures are broadly in line with our *a priori* definition in Chapter 3. They are also likely to be helpful for policy makers.

We also identified six underlying behaviours as well as measure of knowledge and experience of financial matters; attitudes to money matters and other, underlying psychological factors, which could be used to test our a priori conceptual model of financial well-being in Chapter 3.

On the whole, the analysis undertaken to identify these measures has substantiated the domains identified as well as composite measures which are used to measure them. We were also able to use the great majority of the questions in the analysis. However, as in any analysis of this kind, some did not correlate with the key components that we identified for behaviours, knowledge and attitudes. This led us to review the questions, and revise them for inclusion in a repeat survey in 2017, which we discuss further in Chapter 6.

The next chapter examines the distribution of scores (levels of financial capability and well-being) on the components which make up each domain, and then considers some of the relationships between them, using regression analysis. In particular, it identifies the nature and strength of direct effects of the individual components identified above on the financial well-being components and financially capable behaviours. In doing so, it controls for the influence of key socio-demographic, economic and environmental characteristics. As we discuss in Chapter 6, further work is intended to explore the full complexity of the relationships between the different domains in our framework, and the components making up those domains, in more detail, but that is beyond the scope of the current report.

5. Regression Analyses to Understand Financial Well-being

5.1. Introduction

In this chapter, initial analyses based on the model in figure 3-1 and survey data from Norway 2016 (see Appendix 1) are presented. The method used is OLS regression. The aim was to identify the key drivers of financial well-being at each of the three levels. To get an even better understanding of the underlying relationships, similar models were produced for each of the six behaviours, which we consider to be the most under-researched group of components in figure 3-1. In forthcoming publications, a SEM approach will be applied to develop a path analysis to account fully for the implications of the figure.

Financial well-being, as well as the six behaviours, are complex social phenomena, and consequently, a number of regressions were run to arrive at the reported "parsimonious" models. They are called parsimonious in the sense that they have been stripped from theoretically relevant variables that turned out to be very far away from statistical significance. The omitted variables are still listed in tables to document the analytical process and marked with "—" rather than coefficients and z-tests.

The analytical interest, and therefore the focus of this chapter, is on the three levels of well-being rather than the overall measure. Acknowledging that other researchers might be more adhered to the latter, the results are reported but not commented. However, much of what is observed for the three sub-components is of course also valid for the overall measure.

5.2. Financial well-being

The box-plot in figure 5-1 shows the central tendency and spread on the overall well-being variable and each of its three sub-dimensions. Starting with the overall variable, the level of well-being in Norway appears to be high, with the median at 86 index points. Still, a small number of observations are found at the extreme lower end, with scores under 40. The same can be said about *'comfortably off'*, but with a slightly lower median value at around 80. On the other hand, '*Meeting commitments'* displays a somewhat different distributional pattern, with a median is as high as 100 index points and a long tail of atypical observations scoring less than 75. It reflects the fact that Norway is an affluent country with low unemployment and modest income inequality, where payment problems are fairly uncommon. Finally, *'resilience for the future'* has the largest spread, but also the second-highest median at 84 index points. Like *'meeting commitments'*, this pattern reflects the overall affluent character of the Norwegian context. But it also draws attention to the presence of a certain degree of inequality, where a proportion of the population may find themselves struggling to secure their financial situation for the future.

Figure 5-1 Box plot of overall well-being and its three levels. Norway 2016. Weighted results. N=2023

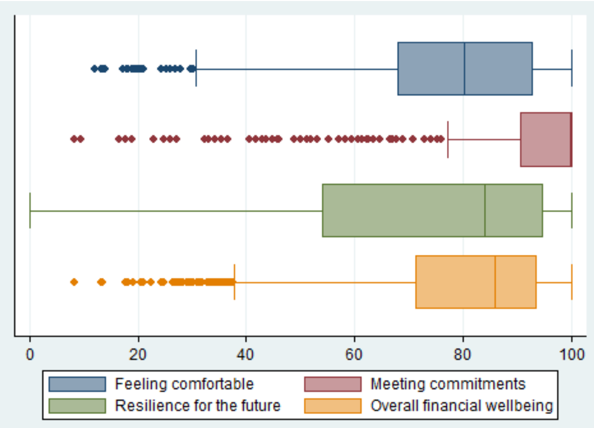


Table 5.1 Predictors of financial wellbeing. OLS regressions. Unstandardised coefficients. Norway 2016. Variable definitions in Appendix 3

	Meeting commitments	Feeling comfortable	Resilience for the future	Overall wellbeing
	Coeff Sig	Coeff Sig	Coeff Sig	Coeff Sig
Behaviours				
Spending restraint	0.26 ***	0.16 ***	0.28 ***	0.002
Active saving	0.30 ***	0.17 ***	0.39 ***	0.02 ***
Not borrowing for daily expenses	0.48 ***	0.26 ***	0.33 ***	0.01 **
Planning how you use your income (budgeting)	-0.04 ***	-0.06 ***	-0.12 ***	-0.00008 ***
Keeping track of money	-0.04 *	-0.03	-0.08 **	-0.003 **
Informed product choice	-	-	0.03 ***	-
Interaction: spending restraint*active saving	-0.002 **	-	-	0.003 *
Interaction: spending restraint*not borrowing for daily expenses	-	-	-	0.0001 *
Knowledge and experience				
Knowledge of product marketplace	0.03	0.08 ***	0.04	0.003 ***
Knowledge of managing money to reduce risk	0.02	0.03	0.06 *	0.002 *
Broad experience of money management	0.03	-	-	-
Psychological factors				
Impulsivity control	-	-0.03	-0.10 ***	-0.002 ***
Locus of control	0.15 ***	0.28 ***	0.10 **	0.01 ***
Self-control	-0.05 *	-	-	-
Attitudes towards spending, saving and borrowing	-	-0.06 *	0.05 ***	-
Personal characteristics				
Female	-1.54 **	-	-2.55 **	-0.06 *
Aged Under 30	-1.52	-5.46 ***	-7.81 ***	-0.26 ***
Aged 30-44	-4.00 ***	-4.62 ***	-10.29 ***	-0.33 ***
Aged 45-60	-2.85 ***	-3.26 **	-8.00 ***	-0.25 ***
Low level education achieved	-0.68	-1.43 *	-2.14 *	-0.08 *
Vocational qualifications achieved	-	-	-2.69 *	-0.05
Working part time	-	-2.87 **	-	-0.07
Self-employed	-	-2.02	-	-0.08
Retired from paid work	-	-1.50	-	-0.01
Not working for reasons other than retired	-2.55 **	-4.58 ***	-4.18 ***	-0.21 ***
Income				
Answering about household income	-7.22 **	-0.12	-6.25	-0.28 *
Income	0.00	-	0.00	0.00
Income*Answering about household income	0.00001 *	-	0.00002 *	0.000001 *
Household characteristics				
Single adult household	-0.69	-2.29 ***	-1.29	-0.06
Dependent child(ren) in household	-2.62 ***	-0.96	-2.20 *	-0.11 **
Experienced a decrease in income	-4.79 ***	-7.78 ***	-0.20	-0.23 ***
Experience an increase in expenditure	-1.97	-4.06 ***	-3.03 *	-0.16 ***
Rents the home	-2.27 *	-2.80 **	-3.82 **	-0.17 ***
Lives in a home owned with a mortgage	0.48	-	-3.44 ***	-0.05
Constant	21.14 ***	22.00 ***	10.92	-2.87 ***
Adjusted R-squared	0.47	0.48	0.52	0.63

Base: 2,013 individuals, weighted. '-' indicates that strongly non-significant covariates tested in full regression have been removed in producing these parsimonious models

The behaviours

The regression models in Table 5.1 identify the main drivers of the three well-being dimensions and the overall well-being component. The expected impacts of the behaviours are strongly supported. All but one (informed product choice) have statistically significant effects on at least two of the three levels of well-being, either individually or through interaction with another behaviour.

Three key behaviours stand out: '*spending restraint*', '*active saving*' and (not) '*borrowing for daily expenses*', all affecting the levels of well-being positively across the three sub-dimensions. This makes intuitive sense: the more capable the behaviour, the higher the scores on well-being. In the case of '*meeting commitments*', however, the effect of spending is moderately adjusted by the level of saving and vice-versa. It may seem counter-intuitive that being capable in one capacity goes together with exercising lower capability in another. Yet, it is understandable; in everyday life, saving and restrained spending are likely to appear as complementary routes to financial well-being. In fact, it is not necessary to maximise both behaviours if the chosen combination enables the household to keep up with its financial commitments. Rather, from the point of view of good living it is reasonable to prioritise between the two, allowing fewer restraints on spending if one saves, and less pressure on saving if one's spending is parsimonious. Doing more of the one may even justify doing less of the other.

The remaining three behaviours have more modest impacts on financial wellbeing. 'I*nformed product choice'* only affects '*resilience for the future'*. This makes sense intuitively; long-term financial security typically involves careful information seeking before taking out a savings product, an investment, a loan or insurance.[16]

Next, '*keeping track of money'* does not seem to influence '*feeling comfortable'*. This result is less intuitive. However, it is possible that the detailed checking that this behaviour reflects is incompatible with a situation characterised by being on par with one's financial expectations and aspirations in the present. If '*comfortable'* means being somewhere in-between focusing on keeping commitments and securing one's financial position for the future, it makes sense that keeping track of one's money is more relevant for those two other levels of well-being — where it is indeed statistically significant.

It is perhaps more surprising that '*keeping track of money'* has a negative effect on both '*meeting commitments'* and '*resilience for the future'*; the more detailed checking, the lower the level of financial well-being. The same goes for '*planning how to use one's income*'; the more planning, the less well-being on all three sub-dimensions including *'feeling comfortable'*. It is, however, consistent with similar analyses in the UK and the US that is reported in section 2.6.1. It is possible that both tracking and planning are behaviours that primarily come into action when people are under some sort of financial pressure. Underlying analyses support the hypothesis; for instance, compared to the general population, the proportion of planners is higher among those experiencing recurrent payment problems. Still, these are relationships that need more investigation and careful modelling.

Knowledge and experience

The model in figure 3-1 predicts that the impact of knowledge and experience is likely to be indirect, operating through behaviours. Nonetheless, some direct effects of these measures on well-being have been identified, although they are not consistent or consistently strong. '*Knowledge of product markets'* is only statistically significant for '*feeling comfortable'*, whereas knowledge about risk only seems to affect '*resilience for the future'*. In both cases, the effects are rather modest. Substantively, the results make sense. Knowing the market typically gives people a sense of control, which may very well contribute to a feeling of ease. Similarly, understanding risk factors is essential to adequate and appropriate planning for the future. The nevertheless modest overall impact of knowledge on financial well-being will be further discussed later in the report.

Psychological factors

Like knowledge and experience, psychological determinants make up a group of components that is not expected to have strong, direct impacts on well-being. Rather, the model in figure 3-1 suggests indirect influences operating through behaviours. The assumption does not win strong support in the data. To be sure, there are two motivations that did not find their way into the model at all — viz.

[16] Importantly, though, we were unable within the time constraints of the survey to assess the appropriateness of the financial products people had bought and incorporate it within our measures of well-being. Had we been able to do so it is possible that the 'informed product choice behaviour may have increased in significance.

‘*social status’* and ‘*time orientation’*. Still, there are some effects that come through even after controlling for nearly 30 variables. Of these, *‘locus of control’* is the most important one, as it affects all levels of well-being positively; the more control people think they have over the courses of events in life, the higher the well-being. Another effect is that ‘*impulsivity control’* has a negative effect on ‘*resilience for the future’*. This is counter-intuitive and raises the need for an in-depth analysis to better understand the relationship between the two variables.

Moreover, ‘*attitudes towards spending, saving and borrowing*’ have a negative effect on *‘feeling comfortable’* and a positive impact on ‘*resilience for the future’*. Both findings make sense; whereas a stricter attitude to key financial behaviours is often favourable to building resilience, the opposite may very well be true for feeling comfortable financially since a perception of having room to manoeuvre financially is probably a crucial part of it.

Finally, it is notable that ‘*self-control’* has a negative effect on *‘meeting commitments’*, which is counter-intuitive. But in line with previous interpretations, it is possible that this is a deep-seated motivation that does not come into play unless one is under some kind of financial strain, or is a less needed virtue as long as one is sufficiently comfortably off. Obviously, along with ‘*planning’* and ‘*keeping track*’, this finding calls for more investigation.

Personal characteristics

As expected, many social factors influence well-being. For a start, women score lower on ‘*meeting commitments’* and ‘*resilience for the future’*. Since variables such as age, family size, income changes and additional income are controlled for, one possible explanation is less influence over the household finances since this is traditionally a male domain. Furthermore, age affects all dimensions of well-being to various degrees; the general picture being that older people experience higher levels of well-being than do younger ones. The effect of education, on the other hand, is restricted to ‘*feeling comfortable’* and ‘*resilience for the future’*, where higher educated people report higher levels of well-being. It is particularly the case for resilience.

Furthermore, whereas the self-employed and the retired seem to enjoy the same levels of well-being as the general population, people who are marginalised on the labour market for other reasons than being retired — e.g. unemployed persons and social assistance recipients — experience lower financial well-being across all three subdimensions. Part-time employees score lower than others on ‘*feeling comfortable’*. These findings are most likely related to unstable income and life situations.

Income

As always in studies of personal finance, income is a key variable in the production of well-being. But the relationship is complex. Income does not seem to impact the *‘feeling comfortable’* domain. As for ‘*meeting commitments’* and ‘*resilience for the future’*, however, the general pattern is that people who are responsible for managing both the household’s and their personal finances have lower scores than those only answering for their personal money. Given the complexity of households as financial units, this makes sense. But as one may expect, the effect is reduced at higher levels of income, and may even turn positive for some groups of households.

Household characteristics

Furthermore, *changes* in the income situation do affect the levels of well-being. Again, as expected, people having seen a decrease in yearly income or an increase in expenditures over the last 12 months are scoring significantly lower on most of the well-being sub-dimensions. There are two exceptions, though. One is that a decrease in income does not seem to matter for '*resilience'.* It is reasonable to assert that recent events of this kind do not appear as a threat to long-term well-being. The second exception is that an increase in expenditures does not impact scores on '*meeting commitments'*. This may seem counter-intuitive at first. However, the observed pattern is controlled for nearly thirty other variables. Hence, one possible explanation is that the instability following from changes in household expenditures is covered by other effects such as '*answering for household income'*.

As for household composition, single adult households report lower scores on '*feeling comfortable'*, which may be related to the fact that they are alone responsible for the day-to-day finances. The presence of dependent children in the household also tends to produce less well-being, especially in relation to '*meeting commitments'*, but also when it comes to resilience. It is as expected since it implies a greater demand on one's (disposable) income.

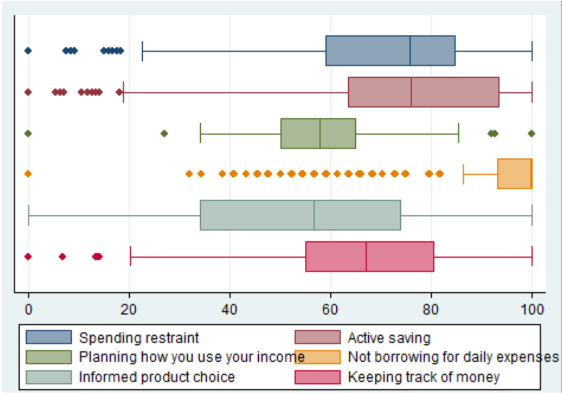
Finally, it is worth noticing that compared to outright homeowners (with no mortgage), tenants have lower scores on all dimensions of well-being, as do homeowners with a mortgage in relation to '*resilience for the future'*.

Summary

As argued throughout the report, financial well-being is a composite made up of three levels. In as much as they are related, yet separate domains in everyday life with implications for individuals, households, social groups and society, they also have unique analytical and political interest. Therefore, it is important to understand what makes the three levels different social phenomena. First looking at *'meeting commitments'*, the key distinguishing features seem to be active saving and spending restraint, and the negative impacts of planning, keeping track of money and self-control. Also notable is the substantially lower scores among people with responsibility for managing the household finances and not just their personal finances. As for '*feeling comfortable'*, it is active saving and spending restraint in combination with the negative effects of planning and financial attitudes. The sharp decrease in well-being associated with income reductions should also be noticed. Finally, '*resilience for the future*' is driven by active saving, spending restraint and avoidance of borrowing for daily expenses. The clear age effect in favour of older people is also well worth noticing.

Without much doubt, the most striking feature of the analysis in Table 5.1, is the strong impact of the behaviours. To better understand what drives financial well-being, the next section looks exclusively at that group of variables.

Figure 5-2 Box plot of six behaviours. Norway 2016. Weighted results. N=2023



5.3. The behaviours

The box-plot in figure 5-2 shows the central tendency and spread of the six identified behaviours. As mentioned in chapter 4, higher scores correspond to higher degrees of capability. The one with the highest median at 100 index points is 'not *borrowing for daily expenses'*. Underlined by a long tail of atypical observations, the median value signifies that this is a kind of behaviour that is rather rare in Norway. The two other key behaviours — *'spending restraint'* and *'active saving'* — display more or less the same pattern, both with medians around 75 index points and a small tail of atypical observations at the lower end. These are people with a high propensity to spend and a low tendency to save, respectively. The same pattern is found for '*monitoring finances'*, but the median is slightly lower: 67. The lowest medians, however, are recorded for 'P*lanning'* and *'information seeking*', both with values in the range of 56-58 index points. The latter is also associated with the largest spread of all six behaviours. Broadly speaking, Norwegians appear to be as likely to be capable as incapable planners and information seekers.

Table 5.2 Predictors of behaviours. OLS regressions. Unstandardised coefficients. Norway 2016. Variable definitions in Appendix 3

	Spending restraint	Active saving	Not borrowing for daily expenses	Planning how you use your income (budgeting)	Keeping track of money	Informed product choice
	Coeff Sig	Coeff Sig	Coeff Sig	Coeff Sig	Coeff Sig	Coeff Sig
Knowledge and experience						
Knowledge of product marketplace	-	0.03	-	0.11 **	0.14 ***	0.55 ***
Knowledge of managing money to reduce risk	0.11 ***	0.05	0.05 **	-0.05	-	0.05
Broad experience of money management	-0.05	0.10 **	0.05 *	0.07	0.10 ***	0.39 ***
Psychological factors						
Time-orientation	0.14 ***	0.23 ***	-	0.12 **	0.10 ***	0.12 ***
Impulsivity control	0.14 ***	-0.05	0.03 *	-	-	0.07 *
Locus of control	0.07 *	0.21 ***	0.07 ***	-	0.04	0.08 *
Social status	-	-0.03	0.03 *	-0.04	-0.03	-
Self-control	0.22 ***	0.07 *	-	0.17 ***	0.10 ***	-
Attitudes towards spending, saving and borrowing	0.45 ***	0.40 ***	0.21 ***	-0.05	-0.04	-
Personal characteristics						
Female	-3.67 ***	3.69 ***	-	5.4 ***	2.54 **	-1.44
Aged Under 30	-	1.57	-	-2.18	-2.48	-
Aged 30-44	-	-1.67	-	-3.32	-2.95	-
Aged 45-60	-	-2.62	-	-4.64	-1.99	-
Low level education achieved	-	-	-	-	2.25 *	-
Vocational qualifications achieved	-	-	0.58	-	2.46 *	-
Working part time	-	-1.94	-	1.64	2.55 *	-
Self-employed	-	-5.73 *	-	-8.02 *	0.13	-
Retired from paid work	2.86 **	-5.35 **	-	-4.1	7.02 ***	-
Not working for reasons other than retired	-	-4.02 ***	-	3.13 *	2.99 **	2.42
Income						
Answering about household income	0.34	3.97	0.23	4.89	6.35 **	0.71
Household characteristics						-
Single adult household	-1.16	-2.02 *	-1.89 ***	2.06	1.14	-
Dependent child(ren) in household	-1.60	-2.36 *	-1.50 **	-	2.45 **	-
Experienced a decrease in income	-1.90	-	-	2.64	-	-
Experience an increase in expenditure	-2.11	-1.65	-1.62	5.23 **	3.51 **	1.74
Rents the home	-3.20 **	-3.57 **	-1.26	4.85 *	4.13 **	-2.51
Lives in a home owned with a mortgage	-2.68 **	-2.27 *	-1.41 **	5.42 ***	1.53	-2.09
Constant	-2.77	3.56	63.33 ***	25.19 ***	30.37 ***	-22.11 ***
Adjusted R-squared	0.50	0.38	0.23	0.06	0.12	0.32

Base: 2,013 individuals, weighted. '-' indicates that strongly non-significant covariates tested in full regression have been removed in producing these parsimonious models

Table 5.2 reports the regressions for each of the six behaviours. Again, the models are built on figure 3.1, investigating the impacts of knowledge and experience, psychological determinants, attitudes to money and social and socio-economic factors.

Knowledge and experience

Starting with knowledge and experience, the impression is as expected; the effects are larger and more varied than they were for well-being. Three of the behaviours have statistically significant positive impacts from two of the three knowledge and experience indicators. One of them is 'not *borrowing for daily expenses'*, which is positively related to the experience of money management and knowledge of how to reduce risk. The relationships are relatively weak but make sense substantively. The two others are '*informed product choice*' and '*keeping track of money,* both being influenced by knowledge of the marketplace and experience of money management. These findings make sense intuitively; informed choice obviously depends on this kind of knowledge and experience. The argument is perhaps weaker for '*keeping track'* since it is possible that this type of behaviour is more directly related to other factors such as influences from home or school. Perhaps the more modest coefficients reflect this.

The remaining three behaviours are each affected by one knowledge and experience indicator. '*Spending restraint'* is influenced by risk knowledge; '*active saving'* is impacted by the experience of money management; '*budgeting'* is affected by knowledge of the product marketplace. These findings are all referring to principal social mechanisms that are likely to trigger the behaviours in question.

Psychological factors

Psychological factors stand out as major drivers of behaviours, with predominantly larger effects than the knowledge and experience indicators. It is especially true for the three key behaviours — '*spending restraint*', '*active saving'* and '*not borrowing for daily expenses*' — all impacted by at least four of the six psychological factors. For all three of them, the largest effect is associated with attitudes towards spending, saving and borrowing; the more capable attitudes, the more likely it is that the behaviours are capable, too. Also, '*locus of control*' affects the three key behaviours — especially '*active saving'*. It makes sense in as much as people actively decide to save and make sure there is a financial buffer, however scarce one's resources are. Moreover, impulsivity control influences *'active spending'* and *'not borrowing for daily expenses'*. The more in control one is of one's impulsive actions, the more one can curb spending and avoid borrowing to cover daily needs. As expected, the relationship is more important for '*spending'* than it is for '*borrowing'*.

The remaining two motivations — self-control and time orientation — both influence *'spending restraint*' and '*active saving'*. Self-control seems particularly related to spending; features such as being good at resisting temptation, controlling one's actions and breaking undesirable habits are all qualities that are likely to enhance capable spending patterns. Time orientation, involving qualities such as long-term thinking and taking on responsibility for one's future, is important to both spending and saving, although more so to the latter than the former.

Finally, it is worth noticing that social status does not impact either spending or saving behaviour. It does, however, affect 'not *borrowing for daily expenses'*. Being concerned about one's social status in immediate social networks and caring about other people's judgements and respect may prevent incapable borrowing. There is, in other words, a "keeping up with the Joneses" effect, but it is rather modest.

As for the three remaining behaviours — '*planning how to use your income'*, '*keeping track of money'* and '*informed product choice'* — the single most important psychological determinant is time orientation, which influences all three of them. Moreover, self-control enhances both budgeting and money tracking, while *'informed product choice'* is driven by locus of control and impulsivity control. It makes sense in as much as choosing the right financial product is a process that presupposes a minimum of active information seeking and careful evaluation of the consequences of the options at hand.

Personal characteristics

Two personal characteristics seem particularly important. One is gender. All things equal, women are less capable spenders, but more capable of saving, planning how to use the income and keeping track of money. Secondly, workforce participation significantly influences all six behaviours in one way or another. Compared to full-time employees, part-time workers are more capable when it comes to tracking money, which is quite understandable because they have lower incomes and more need to know how their financial situation stands. Self-employed people also distinguish themselves from full-time employees by being less capable savers and planners. To the extent that this is about sole-traders or owners of very small firms, it may be explained by variable work assignments and the higher degrees of financial exposure and irregular incomes that they typically experience.

Next, as expected, retirees are more capable spenders and money trackers than the full-time employed, but also less active savers. The same goes for people not working for reasons other than being retired. On the other hand, they score higher on' *budgeting'* and *'keeping track of money'* than do full-time employees.

Finally, it is notable that people who people who are responsible for managing both the household and their personal finances score higher on '*keeping track of money'* compared to those who only answer for their personal income. The same goes for people with vocational and lower levels of education.

Household characteristics

As was the case for well-being, and controlled for all the variables in the model, income as such does not seem to affect any of the behaviours. As opposed to well-being, not even changes in the income situation seems to matter much. The exception is increased expenditure, which is associated with more capable '*budgeting'* and '*keeping track of money'*. Looking at the remaining socio-economic indicators, mortgage holders and tenants exhibit less capable spending and saving behaviours but are more capable at budgeting than homeowners without a mortgage. Moreover, mortgage holders are to a lesser degree avoiding '*borrowing for everyday expenses'*, whereas tenants have higher scores on '*keeping track of money'*.

Finally, the analyses indicate that the household composition impacts some of the behaviours. Compared to couples, single adult households seem less likely to be '*active spenders'*, and more likely to '*borrow for everyday expenses'*. The number of children in the household affects the behaviours in much the same way: the more children, the less capable saving and borrowing. On the other hand, the number of children increases the likelihood of '*keeping track of money'*.

Summary

Overall, Table 5.2 shows that the six behaviours are well accounted for, but to varying degrees. The adjusted R^2 is highest for the spending behaviour, in the case of which the variables in the model explains 50% of the variance. The model fit is also reasonable for '*active saving'* (R^2=.38), '*informed product choice'* (R^2=.32) and 'not *borrowing for everyday expenses'* (R^2=.23). The lowest R^2 are recorded for '*keeping track of money'* (R^2=.12) and '*planning how to use your income'* (*budgeting*) (R^2=.06). Obviously, these are complex social phenomena in need of more research. Particularly the results for '*budgeting'* must be regarded as needing further exploration.

The regression results can be summarised as follows. 'A*ctive spending'* seems to be driven primarily by psychological factors and attitudes. The same goes for active saving, but this behaviour is also affected by the experience of money management and social factors such as labour market marginalisation, household composition and outright homeownership (i.e. without a mortgage). Seen this way, saving is a more complex social phenomenon. '*Informed product choice'*, on the other hand, seems to be primarily driven by knowledge supported by time orientation. *'Not borrowing for daily expenses'* reveals yet another pattern, where the focus is more on attitudes towards spending, saving and borrowing in combination with household composition and knowledge about product markets and risk.

As for the two remaining behaviours — *'planning how to use your income'* and '*keeping track of money'* — it is hard to see any distinguishing patterns. The impacts are spread across psychological determinants as well as knowledge and social and socio-economic indicators. These are also the behaviours with the lowest R^2. Recognising their theoretical significance for the phenomenon under investigation — financial well-being — future research should aim at getting a better understanding of the drivers behind them.

6. Concluding Remarks

6.1. Introduction

An extensive review of the research relating to financial literacy (knowledge and skills), financial capability (behaviours) and financial well-being identified some important gaps in our understanding. While there are generally accepted definitions of both financial literacy and financial capability there is no consensus on how to define financial well-being. Similarly, there have been a number of studies measuring both financial literacy and financial capability of populations across the world, although only the latter has been based on extensive empirical work determining what should be measured and has broad agreement about survey content. The measurement of financial well-being is at a much earlier stage of development and has generally drawn on the general health literature and focussed on subjective measures. Significantly, these strands of research have tended to be carried out in isolation from one another, with few attempts to look at the linkages between them.

As the first step toward filling these gaps, we undertook a re-analysis of the transcripts from two previous studies that had been carried out by one of the authors for the UK financial services regulator and the World Bank. These were designed to capture the views on what constitutes financial capability of broad cross-sections of the populations of nine high-, middle- and low-income countries. A closer look at the data showed that the analyses that had previously been undertaken conflated financial well-being outcomes with behaviours that determine those outcomes. So, for example, the measures of financial capability included questions about both whether people had the financial resilience to deal with an unexpected bill equivalent to a month's income (financial well-being) as well as whether and how often they saved for the future (active saving behaviour). We, therefore, reanalysed the transcripts to tease these two very different concepts out.

Based on our literature review and this qualitative reanalysis we proposed both an *a priori* definition of financial capability and an *a priori* model of its direct and indirect determinants. We then developed a questionnaire that was designed to be used to test both the definition and the model. Both were tested empirically using survey data collected in the spring of 2016 in Norway. Preliminary analyses were consistent with both the definition and the model, albeit with some nuances and unexplained effects.

We have revised the questionnaire in the light of this analysis and repeated the survey in 2017. This data will form the basis of further analysis, including using structural equation modelling to study the inter-relationships in our conceptual model.

6.2. Definition of financial well-being

From our literature review and qualitative re-analysis, we formulated the following working definition of financial well-being:

> *The extent to which someone is able to meet all their current commitments and needs comfortably, and has the financial resilience to maintain this in the future.*

Our working hypothesis is that this definition should be applicable across high- and middle-income countries but that it is less meaningful in the poorest sections of the populations of low-income ones, where people are preoccupied with day-to-day survival.

This definition was tested empirically using principal component analysis of the survey data collected in Norway. It should, however, be remembered that Norway is a country where incomes are both very high and very equal. Our findings should be interpreted with this in mind. The principal component analysis showed that we could create an overall measure of financial well-being using the 12 questions that were intended to measure it. The diagnostics suggested that, strictly, this could be disaggregated into two components – one relating to current financial well-being and one to financial resilience. For policy reasons, we adopted a three component solution, which effectively split the current well-being measure into two sub-measures: 'meeting financial commitments' and 'feeling comfortable' financially. The policy debate in Norway is currently focussed on payment problems rather than the broader and more positive concept of financial well-being, and we wanted to bridge that gap.

In other words, the analysis was broadly consistent with our working definition of financial well-being.

6.3. Understanding financial well-being

Based on our literature review and qualitative re-analysis we also developed an *a priori* model of financial well-being and its possible determinants (see figure 3-1). Informed by this, ten regression models have been conducted to identify the key drivers of financial well-being and enhance the understanding of the underlying mechanisms responsible for the unequal spread of well-being across the population.

It was found that all three measures of financial well-being share three behaviours as their main drivers: '*active saving*', '*spending restraints*' and '*not borrowing for daily expenses*'. Also, *'locus of control'* stood out as an important explanatory variable, with significant impacts on all three levels of well-being. Beyond that, some distinguishing characteristics were identified for each of the measures.

The key additional attributes of '*meeting commitments'* were modest *negative* impacts of the budgeting and keeping track of money behaviours, the modest impact of self-control, and the substantially lower scores among people who are responsible for managing both the household's and their personal finances.

'*Feeling comfortable'* was associated with a combination of modest *negative* effects of the budgeting behaviour and financial attitudes, and a sharp reduction in well-being following unexpected income reductions.

Finally, the additional features of '*resilience for the future*' were a modest effect of the informed product choice behaviour, equally modest and *negative* impacts of the budgeting and keeping track of money behaviours, a clear age effect indicating higher scores for older people, and substantially lower scores among people who are responsible for managing both the household's and their personal finances.

To better understand what drives financial well-being indirectly, regressions on each of the behaviours were conducted. Taking the three behaviours that had the greatest impact on financial well-being first, '*spending restraint'* and '*active saving'* were primarily found to be driven by psychological factors.

'*Active saving'* was also impacted by labour market marginalisation, household composition and outright homeownership. *'Not borrowing for daily expenses*' revealed a different pattern, as it appears to be primarily associated with financial attitudes in combination with two aspects of knowledge and skills (risk understanding, the experience of money management) and household composition.

'*Informed product choice'*, on the other hand, was primarily linked to knowledge supported by time orientation. As for the two remaining behaviours — '*planning how to use your income (budgeting)'* and '*keeping track of money'* — it is hard to see any distinguishing patterns, as the impacting factors were spread across psychological determinants as well as knowledge and social and socio-economic indicators. Also, the regression models explained relatively little of the variation in the scores.

On the whole, these findings are broadly in line with our conceptual model of financial well-being. Behaviours (in particular, 's*pending restraint'*, '*active saving'* and *'not borrowing for daily expenses*') along with social and economic factors are important determinants of financial well-being. While psychological factors (both personality traits and attitudes) were important determinants of these three behaviours – again along with social and economic factors. Our questionnaire did not include adequate measures of borrowing behaviour in general, and this might reasonably have been expected to have a direct influence on financial well-being along with our narrower borrowing behaviour. This has been taken into account in a revised questionnaire that was used to collect new data in 2017.

But equally, there are some unexpected findings. Most notable of these is the negative impact of the '*budgeting*' and '*keeping track of finances'* behaviours on financial well-being and their lack of distinguishing patterns in regressions analysis Here, more research is needed. Indeed, it is possible that these behaviours should not be represented in a conceptual model of financial well-being.

While we expected knowledge and skills to have a smaller effect on behaviours (and no direct effect on financial well-being when behaviours were included in our regression models) the effects are even smaller than we would have expected. However, it should be noted that this was the weakest part of our questionnaire and this may well be the explanation. The 2017 revised questionnaire includes a larger number of questions relating to a wider range of aspects of financial knowledge.

Then there are some direct effects of psychological factors on financial well-being, in addition to their indirect effects through key behaviours. This needs to be understood and may indicate that there are other important behaviours that we have not captured in our questionnaire.

Finally, it is important to underline that the regression analyses were based on data from Norway and that the results are not universal but context-dependent. The drivers of well-being — or some of them — may very well turn out to be different in other country and socio-economic contexts and their relative importance can also be expected to vary considerably. Most notably the lack of impact of income level may well be specific to the high incomes and income equality in Norway. Indeed, it is only through comparative analyses that a comprehensive understanding of financial well-being can be achieved.

6.4. Next steps

It is also important that this analysis should be considered preliminary only, exploring some of the relationships between financial well-being, financial behaviours, financial knowledge and experience, and underlying psychological factors such as personality traits and attitudes.

As we noted above, there were some important deficiencies in the questionnaire and we were fortunate to have been able to revise it and to collect new data from a survey undertaken in 2017. Further analysis will be conducted on this new dataset. Our analysis plans include: re-running the principal components analysis and regressions with the new data and building on and expanding the earlier analysis through structural equation modelling to explore the inter-relationships indicated in our *a priori* conceptual model. They also include further analysis to explore some of the unanticipated effects discussed immediately above. It will allow us to revise our conceptual model to reflect the empirical findings. Finally, we will draw out lessons from this research for policy makers and practitioners

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Appendix 1: The Questionnaire

A: Opening Module

A1. Do you play an active role in making household financial decisions and managing your household's economy?

1. Yes
2. No
3. DK

From this we need to generate routing to one of two statements
If coded 1 at A1

Please answer the questions in this survey in relation to your both household economy and any personal spending. People do this in different ways, so there are no right or wrong answers.

If coded 2 or 3 at A2
Please answer the questions in this survey in relation to your personal economy. People do this in different ways, so there are no right or wrong answers.

Whenever special formulations are needed: indicated in green

A2. WB How would you describe your household's/your current financial situation? (a 5-point scale from very bad to very good)

A3. WB How confident are you about your household's/your financial situation in the next 12 months? 5-point scale from not at all confident to very confident

A4. WB How much control of the household's/ your finances do you feel you have? (5-point scale from very little/no control, little control, neither, somewhat in control, totally in control,

B DAY TO DAY MONEY MANAGEMENT

Ask all

B1. WB How often does your household/you have any money left over after you have paid for food and other regular expenses?

1. Very often
2. often
3. Sometimes
4. Seldom/not very often
5. Never (Go to B3_WB)
6. DK

Ask if 1, 2, 3, 4 or 6 at QB1

B2. B_MM What do you ordinarily do with any money you have left over?

1. 1 save it all
2. Save most but spend some
3. Spend most but save some
4. Spend it all
5. DK

Ask all

B3_WB How often does your household/ you run short of money for food or other regular expenses?

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never (Go to B5)
6. DK

Ask if 'regularly, sometimes or seldom' at QB3

B4_MM Do you do any of these things when you run short of money for food or regular expenses?

1. Borrow the money [Yes/no]
2. Ask family or friends to give you money [Yes/no]
3. Use savings/sell something [Yes/no]
4. Spend less [Yes/no]
5. Delay paying bills [Yes/no]
6. Work extra hours [Yes/no]

B5_MM When your household receives/ you receive your regular income, how often do you plan how it will be used?

1. Very often/always
2. Often
3. Sometimes
4. Seldom/not very often
5. Never (Go to B8)
6. DK

Ask if 1, 2, 3, 4 or 6 at Q B5

B6 B_MM1 Do you plan exactly how you will use the income or only make a rough plan?

1. Exactly
2. Rough plan
3. DK

Ask if yes at B5_MM

B7_MM How often do you keep to the plan you make for using your income?

1. Very often
2. Often

3. Sometimes
4. Seldom
5. Never
6. DK

Ask all

Please indicate how well the following statements describe you (Scale: Very well, quite well, not very well, not at all well, DK)

B8_MM I run short of money because I overspend

B9_ MM I run short of money because I don't plan how I will spend my money

Ask all

Ask if Yes at B11_MM

B10_MM How often does your household/ you use a credit card, overdraft or borrow money to buy food or to pay expenses because you have run short of money?

1. Very often
2. Often
3. Now and then
4. Seldom
5. Never
6. DK

Ask all

B11_MM How often does your household/ you borrow money to pay off debts?

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never
6. DK

Ask all

B12_MM Do you know how much money you (USE SINGULAR FORM) spent personally in the last week?

1. Yes, exactly
2. Yes, approximately
3. DK

B13_MM Do you know how much money you currently have available in **your** bank account for day-to-day spending?

1. Yes, exactly
2. Yes, approximately
3. DK

B14_MM How often do you normally check how much money is in your account?

1. At least once a week
2. At least once a fortnight
3. At least once a month
4. Less than once a month
5. Never
6. DK

IF 1, 2, 3, 4, or 6 in B17_MM

B15_MM Which of these statements best describes how you check the on-line or paper statement for this account? CODE ONLY ONE.

1. I don't usually check

2. I only check the final balance

3. I roughly look through it

4. I check every item

5. DK

Ask all

B16_WB How often you are overdrawn on your bank account?

1. Every month
2. Most months
3. Now and then
4. seldom
5. Never
6. DK

B17_MM How often do you personally buy things you don't need even if it leaves you with insufficient money for food and other regular expenses

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never
6. DK

B18_WB Which one of the following statements best describes how well you are meeting your bills and credit commitments at the moment?

1. Without any difficulty
2. It is a struggle from time to time
3. It is a constant struggle
4. Don't have any bills or credit commitments
5. DK

B19 WB In the past 12 months, how often have you been unable to pay bills or loan commitments at the final reminder due to lack of money?

1. Very often
2. Often
3. Sometimes
4. Seldom
5. Never
6. DK

ASK ALL

Please indicate how well the following statements describe you personally.

B20_MM “I am impulsive and tend to buy things even when I can’t really afford them.”

B21_MM “I am very organised when it comes to managing my money day to day.”

B22_MM “I always pay my bills in time”

B23_K "I know how to plan my spending against my income"

1. Fits very well
2. Fits fairly well
3. Fits neither well nor badly
4. Does not fit well
5. Does not fit at all
6. DK

And please indicate how strongly you agree or disagree that these statements describe you personally

B24_MM “I am more of a saver than a spender.”

B25_MM “I prefer to buy things on credit rather than wait and save up.”

B26 _MM "I would rather cut back than put everyday spending on a credit card I couldn’t repay in full each month.”

1. Agree strongly
2. Agree fairly
3. Neither agree nor disagree
4. Disagree fairly
5. Disagree strongly’
6. DK

C2 B PF_1 I prefer to spend any money I have rather than save it for unexpected expenses or an income fall

1. Agree strongly
2. Agree fairly
3. Neither agree nor disagree
4. Disagree fairly
5. Disagree strongly’
6. DK

C: Planlegging

Ask all

C1 B PF_1 How often do you save money so that you could cover major unexpected expenses or a fall in income?

1. Very often/ always
2. Often
3. Now and then
4. seldom
5. Never
6. DK

Ask all

C3 WB If, tomorrow, you had to meet an unexpected expense that is equivalent to a month's income for your household, how much of it would you be able to cover from money you have available either in cash or in your bank account?

1. All of it
2. Some of it
3. None of it
4. DK

C4 WB Would you need to borrow, overdraw your account or use a credit card to meet an unexpected expense of a month's income?

1. Yes to cover all of it
2. Yes to cover some of it
3. No
4. DK

Ask all

C5 WB If your income fell by a third, for how many months could you meet all your expenses without needing to borrow?

1. More than 12 months
2. Between 6 – 12 months
3. Between 3 – 6 months
4. Between 1 – 3 months
5. 0 – 1 months
6. DK

How well do these statements describe you personally.

C6 B_PF I try to save money to have something to fall back on in the future.

C7 B_PF I try to save some money regularly even if it is only a small amount

C8 B_PF I always make sure I have money saved for bad times

C9 B_PF I find it more satisfying to spend money than to save it

1. Fits very well
2. Fits fairly well
3. Fits neither well nor badly
4. Does not fit well

5. Does not fit at all
6. DK

Ask all

C10 WB Thinking about the total income of your household approximately how many month's income do you have in savings?

1. More than 12 months
2. Between 6 – 12 months
3. Between 3 – 6 months
4. Between 1 – 3 months
5. 0 – 1 months
6. DK

C11 Does your household/ do you have loans?

1. Yes
2. No [Go to D1]
3. DK [Go to D1]

If C11 = 1:

C12 Has your household/ have you borrowed more than one million?

1. Yes
2. No [Go to C13_B]
3. DK [Go to D1]

If C12 = 1:

C13_A: How much have your household/ you borrowed in total?

Sum

DK

If C12 = 2:

C13_B: How much have your household/ you borrowed in total?

Sum

DK

C 14 Do you/ your household have more than 1 million in yearly income (before tax)?

1. Yes [C15_A]
2. No [Gå til C15_B]
3. DK [Gå til D1]

[If 1 in C14]

C15_A How much do you/ does your household make a year?

_ _ . _ _ _ 000 kr

DK

[If 2 in C14]

C15_B How much do you/ does your household make a year?

_ _ _ 000 kr

DK

[ALL]

C16 How has the household's/ your total income developed over the last 12 months?

1. Increased substantially
2. Stayed more or less stable
3. Decreased substantially
4. DK

C17 How have the household's/ your total expenditures developed over the last 12 months?

1. Increased substantially
2. Stayed more or less stable
3. Decreased substantially
4. DK

D: Kjøp av produkter (17 spm)

D CHOOSING PRODUCTS (18 questions)

D1 K_CP Do you have any of the following products in your name (or jointly with someone else)?

The following list is based on the typical level of complexity and ideally would be presented one at a time with the programme stopping as soon as they say yes

1. Investments
2. Health insurance, life insurance or income replacement insurance
3. Mortgages
4. Other credit (loans from bank, credit cards, overdraft)
5. General insurance (car insurance, household contents insurance, building insurance)
6. Deposit savings account
7. Current account
8. None of the above [GO TO QD5]
9. DK [GO TO QD5]

Ask if coded 1 – 7 in DK1, and ask the appropriate Q for the first one on the list that they have coded

D2_K_167 Do you know the interest rate/return you receive on this investment/this savings account

OR

D2 K_25 Do you know how much you pay per year for the insurance police?

OR

D2_K_34 Do you know the interest rate you pay on this loan/credit?

1. Yes exactly
2. Yes, approximately
3. DK

Ask if have coded 1, 2,3,4,5, or 6 at D1 and ask the appropriate Q for the first one on the list that they have coded

D3_K_167 How well informed are you about the conditions relating to withdrawals from this investment(s) or savings account(s) (1 or 6 coded)

OR

D3_K_25 How well informed are you about what exclusions there are on your insurance policy (ies)? (2 or 5 coded)

OR

D3_K_34 How well informed are you about what happens if you do not keep up with the payments on your loan/credit?

1. Very well
2. Fairly well
3. Neither well nor badly
4. Fairly badly
5. Very badly
6. DK

Ask for the most complex product held at D1:

D4 B_CP I How often do you *personally* check that this (name of product) is the best one for your needs?

1. at least once a year
2. less than once a year
3. do not check at all personally
4. Don't know

D5 B_CP Have you personally been responsible for buying or renewing any of the following products in the past 3 years?

The following list is based on the typical level of complexity:

1. Investments
2. Health insurance, life insurance or income replacement insurance
3. Mortgages
4. Formal credit (loans from bank, credit cards)
5. General insurance (car insurance, household contents insurance, building insurance)
6. Deposit savings account
7. Current account
8. Mobile phone subscription
9. None of the above GO TO Q D10

Ask D6 to D9 about the most complex product they personal selected infilling the text in these Qs

D6 B_CP Before you got this *{name of product*}, did you *personally* search for information from a range of sources?

1. Yes
2. No
3. DK [Go to D6_B_2_CP]

D6 B_2_CP Before you got this *{name of second product*}, did you *personally* search for information from a range of sources?

1. Yes
2. No
3. DK

D7 B_CP Did you *personally* consider many different alternatives before you decided which *{name of product*}, to get?

1. Yes
2. No
3. DK

4. **D8_B** How carefully did you ***personally*** check the detailed terms and conditions of the *{name of product*}, before you got it?
1. Checked carefully
2. Checked to have a rough idea
3. I asked someone else to check it for me
4. I did not really check at all
5. DK

Ask all

D9_K How much do you know about the information you can get at Finansportalen?

1. Very much

2. Much
3. Some
4. A little
5. Very little
6. DK

Please indicate how well you think the following statement describe you personally (5 point scale)
D10 K_CP I do not know enough about the available saving products to choose the right one for me

D11 K_CP I know enough about the loan products available to choose the right one for me

D12 B_I I always get information or advice when I have an important financial decision to make

Which of the following statements best describes your knowledge of how to do the following things: (5-point scale My knowledge is VERY good — VERY BAD + DK)

D13 K_CP How to use a price comparison website

D14 K_CP How to compare the terms and conditions of insurance products to get the best one for my needs

Please indicate how strongly you agree or disagree with these statements. (5 point scale + DK)

D15 K_CP A high-return investment is also likely to be high risk

D16 K_CP You can reduce risk by saving into more than one account

D17 M_CP If you were to put money into savings or investment in order to get a high return on it, how much risk of losing some of it would you be prepared to take?

1. No risk at all
2. Low risk
3. Moderate risk
4. High risk
5. DK

E: Roles

Please indicate whether you play a significant role either alone or jointly with someone else in the following activities

E1. Planning how the money in your household/ your money is spent?

E2. Ensuring that regular household expenses/ your regular expenses e.g. mortgage, household bills or repayments on money borrowed are paid?

E3. Making the financial decisions in your household/ making financial decisions?

E4. Buying financial products?

F: Motivasjoner (15 spm)

The following questions deal with life in general, not necessarily with financial issues. Could you please indicate how well they describe you personally:

1. Fits very well
2. Fits fairly well
3. Fits neither well nor badly
4. Does not fit well
5. Does not fit at all
6. DK

F1_TO ' I focus on the long term.'

F2_TO ' I live more for the present day than for tomorrow'.

F3_TO 'The future will take care of itself'.

F4_IM 'I often do things without giving them much thought'.

F5_IM 'I am impulsive'.

F6_IM 'I say things before I have thought them through'.

F7_SS 'I care about how other people see me'.

F8_SS ' I am concerned about my status among people I know'.

F9_SS ' I want other people to respect me'.

F10_SC 'I am good at resisting temptation'

F11_SC ' I find it difficult to break undesirable habits'.

F12_SC 'I am always in control of my actions'
F13_LoC I can pretty much determine what happens in my life

F14_LoC My financial situation is largely outside my control

F15_LoC When I make financial plans I do everything I can to succeed

Appendix 2: About the Survey

Administered by TNS Katar Gallup Norway, SIFOs financial well-being survey 2016 was fielded between 17.10.2016 and 28.10.2016. The sample was based on the TNS internet panel, which is a pre-recruited selection of people over the age of 15. Participants are randomly recruited through other telephone (fixed and mobile) and postal surveys, and constitute an active panel. The panel is certified according to ISO 26362.

The size of the panel indicates that it is possible to draw representative samples from this to different surveys. Since the panellists' background characteristics are already mapped, it is possible to address the survey directly to the target population. The population in this survey was pre-stratified by age, gender, place of residence and education level. Respondents were drawn randomly within each stratum.

The survey was conducted over the Internet. As most Norwegians have got online access, web panels are increasingly being used for interview surveys. Web-based design provides great flexibility in the formulation of the questionnaire, allowing complex question batteries and filter structures (as was needed in this survey). The questionnaire was sent as an invitation to participate, along with a link to its address on the Internet.

The desired sample was 2.000 respondents, representative of the target population (Norwegian adults 18-80 years of age). The survey was sent to 5,043 respondents (Table A.1). Over-sampling is in principle not an issue: although it would allow faster implementation, people who are easily accessible could be overrepresented in the selection. Invitations to participate are sent sequentially according to actual response.

Table A.1: Response. Number of participants

Status	**Number of participants**
Invitations	5043
No contact	2901
Contact	2142
Drop-out:	
Incomplete forms	84
Refused to participate	0
Technical problems	0
Number of interviews	**2058**

Overall, the survey was opened by 2,142 respondents (42%). The proportion is somewhat lower than in "standard" panel surveys, which can be due to the length of the interview. Among the 2.142 panellists, 85 did not return a full response. Nobody opened the form without filling it out. The fieldwork was completed with 2,058 respondents. The answers constitute 96% of respondents who received the survey.

The sample largely follows the population: it is slightly overrepresented in age groups 30-59 years and correspondingly underrepresented among the oldest. Women are slightly overrepresented, while the place of residence distribution follows the population. This is also largely the case for the sample distribution of achieved education levels. The final sample is weighted according to population distribution. Weighting is performed with Rim (Random Iterative Method) weighting.

Appendix 3: Variable Definitions

Component descriptive statistics: all individuals

	Minimum	Maximum	Median	**Mean average**	Std dev
Financial well-being					
Meeting commitments	8	100	100	**91**	16
Feeling comfortable	12	100	80	**77**	18
Resilience for the future	0	100	84	**75**	25
Overall financial wellbeing	8	100	86	**81**	17
Behaviours					
Spending restraint	0	100	76	**71**	21
Active saving	0	100	76	**75**	21
Not borrowing for daily expenses	0	100	100	**94**	12
Planning how you use your income (budgeting)	0	100	58	**54**	26
Keeping track of money	0	100	67	**67**	17
Informed product choice	0	100	57	**56**	26
Knowledge and experience					
Knowledge of product marketplace	0	100	56	**55**	19
Knowledge of managing money to reduce risk	6	100	75	**76**	17
Broad experience of money management	0	100	68	**67**	15
Psychological factors					
Time-orientation	0	100	75	**71**	19
Impulsivity control	0	100	66	**65**	20
Social status	0	100	50	**50**	20
Self-control	0	100	58	**57**	15
Locus of control	15	100	72	**71**	15
Attitudes towards spending, saving and borrowing	0	100	76	**75**	18

Base: 2,013 individuals, weighted. A minimum value of greater than zero indicates that no one in the sample scored zero on this com

Predictor variable	Unit of change (minimum, maximum, where appropriate)
Behaviours	
Spending restraint	1/100 (1, 100)
Active saving	1/100 (1, 100)
Not borrowing for daily expenses	1/100 (1, 100)
Planning how you use your income (budgeting)	1/100 (1, 100)
Keeping track of money	1/100 (1, 100)
Informed product choice	1/100 (1, 100)
Interaction: spending restraint*active saving	1/100 (1, 100)
Interaction: spending restraint*not borrowing for daily expenses	1/100 (1, 100)
Knowledge and experience	
Knowledge of product marketplace	1/100 (1, 100)
Knowledge of managing money to reduce risk	1/100 (1, 100)
Broad experience of money management	1/100 (1, 100)
Psychological factors	
Time-orientation	1/100 (1, 100)
Impulsivity control	1/100 (1, 100)
Locus of control	1/100 (1, 100)
Social status	1/100 (1, 100)
Self-control	1/100 (1, 100)
Attitudes towards spending, saving and borrowing	1/100 (1, 100)
Personal characteristics	
Gender	1/1 (0 Male, 1 Female)
Aged Under 30	1/1 (0 Over 60, 1 Under 30)
Aged 30-44	1/1 (0 Over 60, 1 Under 30-44)
Aged 45-60	1/1 (0 Over 60, 1 Under 45-60)
Low-level education achieved	1/1 (0 Degree-level, 1 Low-level qualifications achieved)
Vocational qualifications achieved	1/1 (0 Degree-level, 1 Vocational qualifications achieved)
Working part time	1/1 (0 Working full-time as employee, 1 Working part-time as employee)
Self-employed	1/1 (0 Working full-time as employee, 1 Self-employed)
Retired from paid work	1/1 (0 Working full-time as employee, 1 Retired from paid work)
Not working for reasons other than retired	1/1 (0 Working full-time as employee, 1 Not working for other reasons)
Income	
Answering about household income	1/1 (0 Answering about personal income only, 1 Answering about household income)
Income	NOK1
Income*Answering about household income	NOK1
Household characteristics	
Single-adult household	1/1 (0 Couple or other adults 1 Single-adult household)
Dependent child(ren) in household	1/1 (0 No dependent children, 1 Any dependent children in household)
Experienced a decrease in income	1/1 (0 No drecrease in income, 1 Decrease in income)
Experience an increase in expenditure	1/1 (0 No increase in expenditure, 1 Increase in expenditure)
Rents the home	1/1 (0 Lives in a home owned outright, 1 Rents the home)
Lives in a home owned with a mortgage	1/1 (0 Lives in a home owned outright, 1 Lives in a home owned with a mortgage)

Consumption Research Norway SIFO at Oslo and Akershus University College of Applied Sciences (HiOA) has a special responsibility to contribute to the knowledge base for consumer policy in Norway and will develop new knowledge about consumption, consumer policy and consumer position and role in society.

Key research topics are:

- consumers in the market and consumer choice
- household resource allocations
- consumer economy - debt development and poverty
- technological development and consumers' every day life
- digital daily life and coping
- environmental effects of different types of consumption
- food and eating habits
- textiles - value chains - consequences for everyday life and environment
- consumption significance for social inclusion
- consumer policy

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