

The journey from childhood skills to adult financial capability – analysis of the 1970 British Cohort Study

November 2017

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Acknowledgements

We are grateful to the Centre for Longitudinal Studies (CLS), UCL Institute of Education for the use of these data and to the UK Data Service for making them available. However, neither CLS nor the UK Data Service bear any responsibility for the analysis or interpretation of these data.

We also want to thank Helen Pitman, Shadi Ghezelayagh, Tom Clarke, Kirsty Bowman-Vaughan and Ann Griffiths from the Money Advice Service for their time contributing to this analysis and reviewing and editing this report.

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Executive summary

Introduction

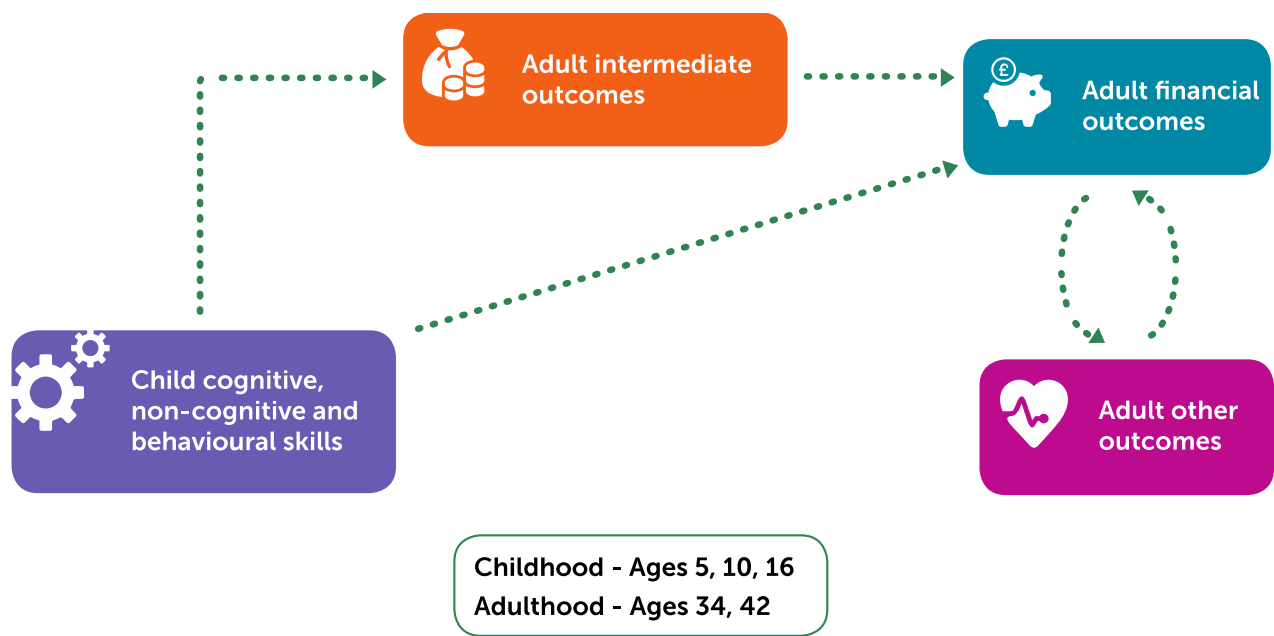
The Money Advice Service believes childhood and adolescence are vital times to influence future financial capability and that what happens in these years can have profound effects on financial outcomes. Too little is known however about the factors in childhood and adolescence that contribute to long term financial outcomes.

This research aims to contribute to filling these gaps. This study tests the links between a range of cognitive and non-cognitive skills, and behaviour, in childhood and adolescence, and financial outcomes in adulthood. The financial outcomes considered are: pension saving; regular saving; having a low debt-to-income ratio; net wealth; and financial self-assessment.

In addition, the study considers the relationship between these financial outcomes and other aspects of a person’s life from childhood and adolescence to adulthood.

It does this to help inform the Money Advice Service’s understanding of the predictors of adult financial outcomes, and to understand more about the links between these and wider social policy priorities. This will be combined with other research to inform the design and targeting of interventions, and future commissioning and policy recommendations.

The following diagram summarises the research that took place:



The analysis uses data from the **1970 British Cohort Study** (BCS70), a longitudinal survey that gathers a wide range of information on more than 17,000 individuals born in Great Britain in a particular week in April 1970, interviewing them periodically throughout their lives. Throughout the study we use a regression-analysis approach to **control for personal and family background characteristics**, allowing us to isolate the links between skills and financial outcomes for individuals who are otherwise identical.

A number of studies have used BCS70 and other longitudinal studies to explore the links between childhood skills and adult outcomes. The research described in this report builds on the existing literature by:

- exploring the links between childhood and **a range of adult financial outcomes**;
- considering the strength of the impact of different skills measured at different ages across childhood and adolescence, which may have potential **implications for the targeting and design of policy and interventions**;
- adding new findings around the connections and interactions between **adult financial outcomes and other important life outcomes**.

Key findings

Childhood skills are linked to adult financial outcomes

We find adult financial outcomes can be predicted by childhood skills and behaviour, in some cases from as young as five years old. It is remarkable that adult financial outcomes can be predicted to any extent using information captured decades earlier; however, these findings are consistent with a wealth of previous research on the connection between early childhood development and outcomes in later life. Even when personal and family characteristics, like income and parents' education, are taken into account, children with better non-cognitive, cognitive, and/or behaviour in childhood, are more likely to have better financial outcomes later in life.

The links between skills and financial outcomes tend to **strengthen with the age** at which the skills are measured. Some of the stronger relationships appear to embed at age 10, suggesting a turning point between the ages of 5 and 10. This result points to the importance of **primary school age** in a child's development.

Certain individual skills appear to drive the results

Looking in detail at different individual skills within the wider groupings, we find **self-control**¹ and **locus of control**² (and, to a lesser extent, self-esteem) drive the links with many adult financial outcomes. For example, if we compare two children with the same personal and family background characteristics, the child that displays stronger self-control or locus of control is more likely to have positive financial outcomes in later life. At age 16, **extraversion**³ and **agreeableness**⁴ are the personality traits that appear to drive the relationship with adult financial outcomes.

Both the reading score and the maths score at age 10 appear to drive adult financial outcomes to a comparable extent. There is no evidence to suggest that one effect is stronger than the other.

Examining the role of intermediate outcomes helps us understand the journey from childhood skills to adult financial outcomes

From childhood to adulthood, there are countless pathways that an individual can take. To better understand the **journey between childhood skills and adult outcomes**, we explore the role of certain **intermediate outcomes**: things that occur

¹ Self-control refers to the ability to inhibit impulses and control emotional expression.

² The extent to which someone feels they can control their own life.

³ Related to fondness for large groups, popularity with other children, and leadership.

⁴ The tendency to act in a co-operative, unselfish manner.

between childhood and the ages when adult financial outcomes are observed – such as educational attainment, employment status, marital status, income and home ownership.

Intermediate outcomes (particularly **educational attainment** and **employment status**) often *channel* the link between childhood skills and adult financial outcomes. In particular, educational attainment channels many of the links between cognitive skills at ages 5 and 10 and adult financial outcomes. For example, a child with higher cognitive skills is more likely to attend university, which itself is linked to a higher likelihood of pension saving. In the case of cognitive skills at age 5, once educational attainment is controlled for, we see no additional link between the child's early cognitive skills and pension saving later in life.

There are some cases that demonstrate a **more direct relationship** between the skill and financial outcomes – that is, even when controlling for an intermediate outcome, we still observe a link between childhood skills and adult financial outcomes. This is particularly the case for relationships with skills **at age 16** (and age 10 to a lesser extent), when the link with financial outcomes in adulthood is stronger.

Certain pathways protect against adverse financial outcomes

Although lower skills are linked to adverse adult financial outcomes, there are other **factors which can compensate for lower skills** to some extent, and thereby **protect** an individual from these outcomes. **Educational attainment** and **employment** (and other intermediate outcomes that channel the link between childhood skills and adult financial outcomes) can be seen as pathways that protect children from adverse financial outcomes in adulthood, in that they raise the likelihood of positive outcomes for children of **all cognitive skill levels**.

Focusing only on **children with low skills** at age 10, a number of protective pathways are particularly effective such as:

- **Vocational education** and **employment** (particularly paid employment) to moderate the effect of **low cognitive skills**.⁵
- High levels of **qualifications** and **academic education**, **employment**, and having a **professional occupation** compensate for **low non-cognitive skills**.
- **A high level in one skill can in many cases compensate for a low level in another skill**. For example, behavioural skills are an effective protective pathway for individuals with lower levels of cognitive ability when it comes to savings behaviour.

Personal and family background characteristics have an impact

In addition to childhood skills, personal and family background characteristics during childhood can also be linked to adult financial outcomes. Some characteristics, such as being **female** and growing up in a **household with more than three children**, are negatively associated with some adult financial outcomes, even when controlling for other characteristics and skills. Other factors, such as **higher levels of parental education**, have a positive impact on financial outcomes.

The link between childhood skills on adult financial outcomes is **greater for certain demographic subgroups** than for others. The findings suggest that skills play a larger role in determining later life financial outcomes among children in the following groups: **females; growing up in households with three or more children; resident in Scotland; and living in social housing**.

⁵ In the sample, children with low cognitive skills at age 10 were more likely to follow the vocational route, with 54% of them later obtaining a vocational qualification as their highest academic qualification versus 25% for an academic qualification.

There is a relationship between adult financial outcomes and other adult outcomes

This study also confirms the relevance of financial outcomes for other important aspects of adult life, such as mental and physical health and life satisfaction. For example, individuals with a high debt-to-income ratio at age 42 are more likely to rate their health worse; more likely to have a long-standing illness; and will have, on average, lower life satisfaction. The strongest links are found with **health self-assessment** and **life satisfaction**, although links with **mental health** are also found in many cases.

We examine whether financial outcomes drive adult outcomes or vice versa and find in many cases, an **interdependency** between financial and other adult outcomes – doing better or worse in one area may often affect the other. For example, the relationship between financial self-assessment and health self-assessment is likely to go in both directions, while higher financial self-assessment is more likely to drive higher life satisfaction, rather than the other way around.

Chapter 1 – Introduction

1.1 What are the objectives of this study?

What children learn and experience as they are growing up has the potential to shape how they interact with money for the rest of their lives. The Money Advice Service Business Plan and the 10 year Financial Capability Strategy for the UK (Money Advice Service, 2015) prioritise children and young people as an essential area of focus.

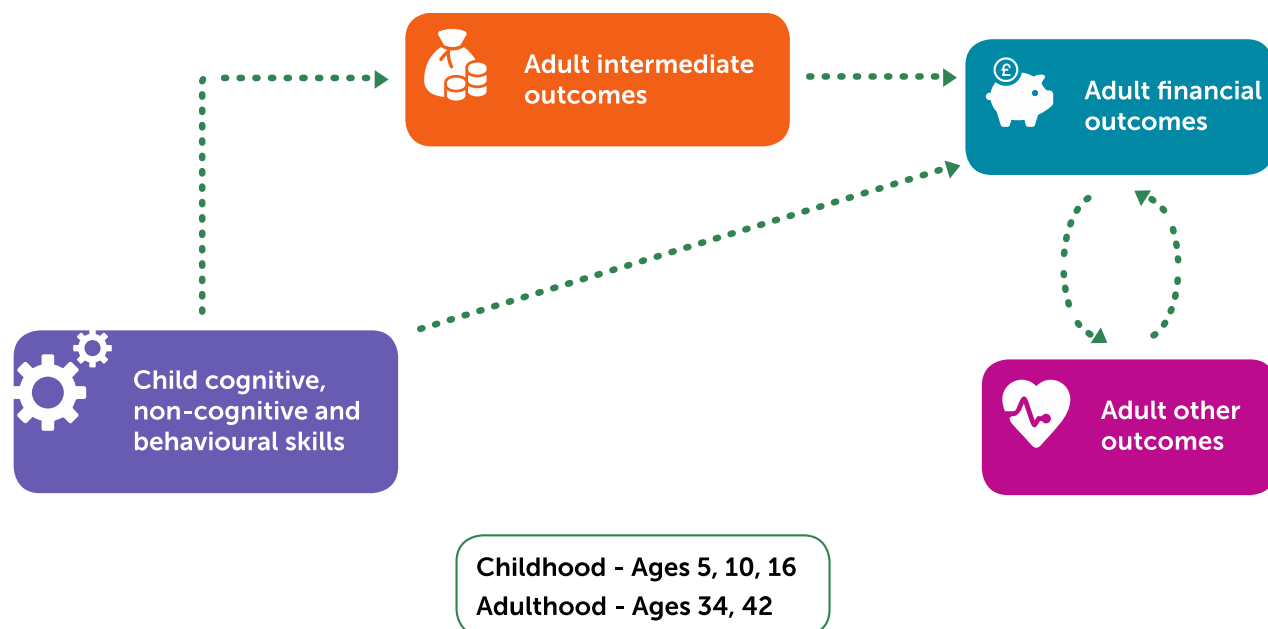
However, there remain too many gaps in the evidence and research around children and young people's financial capability, and too little is known about the factors in childhood and adolescence that contribute to long term financial outcomes.

This research aims to contribute to filling these gaps. We have tested the links between cognitive, non-cognitive, and behaviour, in childhood and adolescence, and long term financial outcomes in adulthood. In so doing, this research uncovers important new understandings about the predictors of adult financial wellbeing, possible indicators of risk and vulnerability, and important links between financial outcomes and wider social policy priorities.

There are multiple strands of analysis, each represented in Figure 1 below. This diagram provides a framework for the analysis and how it represents the many connections between different aspects of a person's life, from childhood and adolescence, to adulthood. This report focuses on the following connections:

- Understanding the **relationship between children and young people's skills and their financial outcomes** in adulthood. This is the focus of the study.
- Comparing the **relative strength** of relationships with different skills measured at different ages, to identify the skills most linked to financial outcomes.
- Examining the role of **intermediate outcomes** (such as education and employment) that may channel the impact of skills on financial outcomes. This provides a deeper understanding of how the relationship between childhood skills and financial outcomes operates.
- Testing whether particular subgroups of children are at higher risk of adverse financial outcomes in adulthood.
- Examining the role of potential **protective pathways**, which may allow an individual with poorer childhood skills to avoid adverse adult financial outcomes.
- Establishing the link between adult financial outcomes and **other adult outcomes** such as health, life satisfaction and mental wellbeing. This tells us what relevance financial outcomes have for other aspects of a person's life.

Figure 1: Overview of analysis



1.2 Structure of the report

Chapters 3 to 5 present the findings from each stage of analysis in turn. Each chapter begins with a summary of the key findings. A description of the analysis follows, supported by notes on the methodology. The findings are then presented in a table, followed by discussion of the findings in the text. More details on the methodology and additional results can be found in the Technical Appendix. Chapter 6 provides an overview of the results organised by financial outcome, and Chapter 7 concludes.

1.3 What is BCS70?

The analysis uses data from the 1970 British Cohort Study (BCS70) – a longitudinal survey managed by the Centre for Longitudinal Studies which gathers a wide range of information on more than 17,000 individuals born in Great Britain⁶ in a particular week in April 1970, interviewing them periodically throughout their lives. This repeated interviewing of a large number of people allows analysis to show the links between **skills and behaviours in childhood and adolescence, and financial outcomes and wider outcomes in adulthood** at the individual level.

The data used in this study is from the waves in 1975 (when participants were 5 years old), 1980 (age 10), 1986 (age 16), 2004 (age 34) and 2012 (age 42). These waves of data were selected to cover life-stages of interest (childhood, adolescence and adulthood) and when financial outcome questions were most prevalent.

1.4 What does the existing literature say?

A literature review⁷ was conducted as part of this study with the main purpose of guiding the selection of indicators of childhood skills and of adult financial outcomes. Some relevant papers were discovered through an online literature search and other relevant papers were identified by the Money Advice Service. Literature on the effect of childhood skills on adult financial capability or financial outcomes was scarce. There was a greater volume of literature focused on linking childhood skills to other adult outcomes, particularly labour market outcomes such as wages and employment.

⁶ 17,200 individuals born between 5 and 11 April 1970. The sample size varies dependent on the survey response rate over time. The survey does not include any information on those born in Northern Ireland after the first survey wave.

⁷ The full literature review is included in the Technical Appendix.

In the literature reviewed, there is some evidence of the impact of childhood skills on adult outcomes, depending on which skill and outcome combination is being examined. Most of the studies found a statistically significant positive link between cognitive skills (measured as a composite, as numeracy or literacy scores, or as general intelligence) and adult labour market outcomes (such as wages and employment). None found a statistically significant negative link.

There was some evidence in the literature reviewed suggesting a relationship between childhood skills and financial capability. Grohmann et al (2015)⁸ found a positive effect of numeracy on financial literacy in adulthood,⁹ but no effect on financial behaviour (as represented by the number of different financial asset types held by the owner). Prevoo and Ter Weel (2013) used BCS70 data to examine childhood predictors of whether an adult saves some amount of money per month, which is slightly different from the regular saving outcome included in this study. They find that emotional stability and conscientiousness impact one's saving probability positively, whereas extraversion does so negatively.

Meanwhile, Herd et al (2012), using the Wisconsin Longitudinal Study, found some positive effects of general intelligence – measured with the Henmon-Nelson Test of Mental Ability – on financial capability, measured by knowledge of one's own financial situation. However, they also found no statistically significant effect of numeracy and literacy on the same measure.

Goodman et al (2015), in a report on behalf of the Early Intervention Foundation, used BCS70 data to examine the links between non-cognitive skills and a broad range of adult outcomes, including labour market outcomes (such as wages) and other outcomes (such as mental health and life satisfaction). They find that income is positively affected by one's self-perception and awareness, self-control and regulation and social skills. Furthermore, they also find that self-control and self-regulation positively impact the probability of being employed. These findings are corroborated by an extensive literature review undertaken in the same report, which additionally finds a positive impact of self-perception and awareness on employment.

Furnham & Cheng (2017), using the National Child Development Study, found that cognitive ability (assessed with a general ability test), and the personality traits, conscientiousness and openness (measured at age 11) positively impact net monthly earnings at age 54. This impact was observed while controlling for potentially confounding demographic factors such as gender, social class, educational attainment, marital status and other personality traits.

While a number of studies have used BCS70 and other longitudinal studies to explore the links between childhood skills and adult outcomes, there remain too many gaps in the evidence and research around children and young people's financial capability, and too little is known about the factors in childhood and adolescence that contribute to long-term financial outcomes. This research aims to contribute to filling these gaps.

1.5 Description of childhood skills and adult financial outcomes

1.5.1 What are childhood skills?

The focus of this report is the link between skills in childhood and adolescence and financial outcomes in later life. The BCS70 assesses the skills of children and young people at the ages of 5, 10 and 16, and these are the skills referred to in this report. From this point, we will use the term **childhood skills** to refer to the skills of children and young people. When investigating the link between childhood skills and adult financial outcomes, we consider three different categories: **cognitive skills**, **non-cognitive skills** and **behavioural characteristics**.

The latest developments in the psychology literature recognise that the distinction between cognitive skills, non-cognitive skills and behaviour is not always clear-cut and that for any individual there will be interaction between them. As noted by Borghans et al (2008), cognitive processes have an impact on personality and few aspects of behaviour are independent of cognition. In this analysis, we have used these three categories as a simple and helpful way to group skills that are more-or-less alike, or that can be influenced through similar channels, for the purposes of thinking about how children learn and develop and the support from which they may benefit.

We do observe in the BCS70 that cognitive skills, non-cognitive skills and behaviour are all positively correlated (ie, an individual with above average performance in one childhood skill is more likely to have above average in the other skills too). For this reason, our approach is to control for other skills when attempting to identify the impact of one skill on adult outcomes.

⁸ Using a survey specifically collected for this study. Measures related to participants' childhoods were based on their memories.

⁹ Based on answers to questions on interest rates, inflation and diversification, and a question asking respondents to name foreign banks operating in the country.

Cognitive skills can be defined as ‘the ability of an individual to perform the various mental activities most closely associated with learning and problem solving’ (NCME, 2015). Sometimes referred to as ‘hard skills’, these tend to be measured by general intelligence, literacy (reading) and numeracy, and deal with the way people process the information in the environment around them. In general, cognitive skills can be measured by tests, for instance IQ or reading tests.

‘Hard’ cognitive skills can be contrasted with ‘soft’ skills, although one should not necessarily be seen as more important than the other. These can be regarded as skills required in life that are not directly related to cognition. The concept of soft skills is broad, and captures such diverse elements as personality traits, emotional intelligence and ‘people skills’. To bring more structure to such a broad concept, soft skills can be separated into two closely related concepts, according to how they manifest themselves and how they are captured in the data.

On one hand, there are soft skills which are measured within BCS70 through observed behaviour. Personality traits, for instance, may manifest themselves in the way that people deal with their surroundings. For example, more extraverted people are generally more outgoing. This is observable to the outside world. The literature often refers to this group of traits as **behavioural characteristics**. Within BCS70, these behavioural characteristics are measured based on observed behaviour of the child as reported by the child’s mother.

On the other hand, there are soft skills which are more difficult to measure by observed behaviour and are rather related to concepts like **self-perception**. As an example, **locus of control** – the extent to which someone feels they can control their own life – is much less readily observed by the outside world. This group of skills is measured through self-reporting and is referred to as **non-cognitive skills**.

1.5.2 How were childhood skill measures defined for the analysis?

The selection of childhood skills indicators for analysis was guided by the review of the literature on the link between childhood skills and adult outcomes, albeit constrained by the availability of indicators within the BCS70.

Composite measures were constructed from **groups of individual indicators** to represent overall cognitive skills and non-cognitive skills using Principal Component Analysis.¹⁰ This is a statistical technique that produces a composite measure, which is a single measure that combines multiple individual skills to produce an overall indicator. For instance, the composite measure of cognitive skills at age 10 combines the British Ability Scales score (which measures general intelligence as assessed by tests on word definitions, memory, similarity of words and pattern recognition), reading score, and the maths score at that age.

Table 1 lists the composite and individual skill measures used in the analysis; indicates the age at which they were assessed in BCS70; and also provides a brief description. Further detail on the underlying survey questions used and the construction of the composites is available in the Technical Appendix.

¹⁰ With the exception of the composite cognitive measure at age 16, which is based on achieved academic results at that age (reported at age 26).

Table 1: Childhood skills used in analysis, by age

Skill	Definition	Age 5	Age 10	Age 16
Composite measure of cognitive skills	A combination of all cognitive skills considered at each age constructed using Principal Component Analysis (in the case of age 16, a measure based on the child's academic achievement)	✓	✓	✓
Reading ability	Mother's assessment of child's reading skill (ie, whether the child can read letters, some words, simple sentences)	✓		-
Copy designs test score	Score on how well the child can copy a simple design (eg, a circle)	✓		-
Human figure drawing test	Score on how well the child represents different features in drawings of human figures	✓		-
Profile drawing test score	Score on how well the child can complete the profile of a human face, scored on, eg, presence and shape of eyes, ears and nose	✓		-
British Ability Scales score	Test of general intelligence consisting of tests on word definitions, memory, similarity of words and pattern recognition		✓	-
Maths score	Maths test score developed specifically for the BCS, known as the Friendly Maths Test.		✓	-
Reading score	Test Score in Edinburgh Reading		✓	-
Composite measure of non-cognitive skills	A combination of all non-cognitive skills considered at each age constructed using Principal Component Analysis	-	✓	✓
Academic self-concept	Self-assessed ability in mathematics, reading, spelling, creative writing, art and craft and topic/project work.	-	✓	
Challenge	A measure capturing a 'strong desire to get ahead' – eg, whether it matters to have an interesting job, to get a promotion, and to have a job with real challenge	-		✓
Locus of control	Greater internal locus of control means that the individual believes they control their own life (rather than events occurring due to external factors outside of their control)	-	✓	✓
Self-esteem	Self-esteem measures a child's sense of self-worth	-	✓	✓
Self-control	Self-control measures the ability to inhibit impulses and control emotional expression	-	✓	
Social skills	Teacher's assessment of how the child interacts with peers; the number of friends; 'boldness' and co-operativeness	-	✓	✓
Reversed Rutter behavioural score¹¹	A score which is calculated based on parents' responses to a series of questions¹² on the child's overall behaviour, a higher score indicating a better behaviour	✓	✓	✓
Agreeableness	The tendency to act in a co-operative, unselfish manner	-	✓	✓
Good conduct scale	Whether the child does not exhibit antisocial and unco-operative behaviour	-	✓	✓

¹¹ For ease of reporting and consistency with other skills, the scale has been reversed so that a higher score indicates better behaviour

¹² For ages 10 and 16, these underlying questions can also be used to construct personality traits, such as extraversion and emotional health. Measures have not been generated at age 5 because it was deemed that the way in which the variables are constructed would not be representative for behaviour of a 5-year-old.

Conscientiousness	The tendency to be organised, responsible, and hardworking	-	✓	✓
Emotional health	The extent to which the child is rarely worried, miserable, fearful, fussy, sullen or tearful.	-	✓	✓
Extraversion	Based on indicators including fondness for large groups, popularity with other children, and leadership	-	✓	✓
Neuroticism	Emotional instability and proneness to psychological distress	-	✓	✓

Note: Definitions of cognitive skills are adapted from the descriptions of the tests provided in the BCS70 documentation. Definitions for behavioural and non-cognitive skills are adapted from descriptions provided in Goodman et al (2015), Lenton (2014), Daly et al (2015) and Prevoo & Ter Weel (2013).

It should be noted that the set of skills measures assessed and captured in BCS70 changes over time, meaning that the construction of composite skills measures is different for different waves. For instance, BCS70 does not assess non-cognitive skills at age 5, meaning that this cannot be included in the analysis. In addition, there was a small sample size associated with teacher-reported cognitive skill measures in the 1986 (age 16) wave. Therefore, instead of using a definition that would lead to a small sample size, we chose to construct a new cognitive skill measure based on the level of academic qualification (ie, O-levels or equivalent) achieved at age 16, which itself is captured based on recall at age 26 in the 1996 survey wave.¹³ Further details on the construction of this measure can be found in the Technical Appendix.

Once constructed, the skill measures were **standardised**¹⁴ in order to make the findings comparable. Such transformation allows us to compare a child who scores in the top 15th percentile (ie, 15% of all children score at that level or above) of a particular measure to a child in the bottom 15th percentile (ie, 15% of all children score at that level or below) of the measure.

1.5.3 Adult financial outcomes

The set of financial outcomes analysed in this report, presented in Table 2 below, provide a general assessment on how an individual behaves with financial matters in adulthood. A more detailed explanation on how these variables were constructed is provided in the Technical Appendix.

The selection of outcomes was guided by the indicators comprising the Money Advice Service's *Adult Outcomes Framework for Financial Capability*¹⁵ and informed by the Money Advice Service's work on *Measuring financial capability – identifying the building blocks*,¹⁶ although constrained by availability of similar measures within the BCS70. For instance, the information captured within BCS70 did not allow the construction of an over-indebtedness measure in line with Money Advice Service's Adult Outcomes Framework; and the measures of net wealth and debt-to-income ratio were only available at the household level, not at the survey participant level.

As with the measures of childhood skills, the set of adult financial outcomes captured by BCS70 varied over time. The survey waves at ages 34 and 42 had the greatest amount of information available on financial outcomes, which is why the analysis focused on these ages.

¹³ It is possible that recall of O-level results may not be as accurate at age 26 as it would have been if captured earlier.

¹⁴ Distribution centred at 0 and rescaled by dividing by two standard deviations.

¹⁵ Available at: www.fincap.org.uk/outcomes_adults

¹⁶ Available at:

https://masassets.blob.core.windows.net/cms/files/000/000/570/original/A4_MAS_Fincap_Measuring_Financial_Capability_Building_Blocks_Nov2016.pdf

Table 2: Financial outcomes by age

Financial outcome	Definition	Age 34	Age 42
Regular saving	Whether saving regularly	✓	
Pension saving	Whether saving for retirement or contributing to a pension	✓	
Low debt-to-income ratio	Whether the person's household debt (excluding mortgage) is less than a quarter of their annual household income ¹⁷		✓
Net wealth	Total savings minus total debt (excluding mortgage)		✓
Financial self-assessment	Self-assessment of an individual's financial situation (ie, 'finding it very difficult', 'finding it quite difficult', 'just about getting by', 'doing all right' and 'living comfortably')	✓	✓

1.6 What factors are controlled for in the analysis?

The findings presented in Chapter 2 are obtained using a regression-analysis approach. This approach can control for personal and family background characteristics, allowing us to isolate the links between skills and financial outcomes for individuals who are otherwise identical. When exploring the link between childhood skills and adult financial outcomes, the personal and family background characteristics controlled for in the analysis are:

- family income;
- number of people in the household, home ownership status, neighbourhood social rating;
- parents' highest educational attainment, employment status and social class; and
- gender, ethnicity, gestational time, age of parents.

This set of personal and family background characteristics attempts to encapsulate most characteristics that are likely to affect children's later life financial outcomes.¹⁸ In doing so, once the impact of these characteristics is controlled for, the remaining relationship between childhood skills and adult financial outcomes is more likely to indicate causality compared to a simple study of the association between the two variables.

In the analysis of the link between adult financial outcomes and other adult outcomes, a range of adult personal and socioeconomic characteristics were used as controls. This again allows us to isolate the links between financial and other outcomes for adults who are otherwise identical. The adulthood controls include:

- gender, ethnicity and region of residence;
- number of children, cohabitation status, and if cohort member does not live with a partner, why not (including bereavement, divorce or separation);
- highest educational attainment, employment status (including part-time vs. full-time employment and public vs. private sector employment), individual income and home ownership; and
- locus of control, optimism and confidence levels (in order to examine whether these traits were linked to some more subjective adult outcomes such as self-reported health outcomes).

More detail on the methodology is included in the Technical Appendix.

¹⁷ A cut-off at less than a quarter of annual household income was chosen because this cut-off provides the strongest relation with other variables related to indebtedness, and provides the strongest correlation with childhood skills.

¹⁸ A broad set of characteristics was established after discussions with the Money Advice Service and based on the availability of measures in the BCS70 at ages 5, 10 and 16. The final selection of personal and family background characteristics was refined such that each measure is linked to at least one of the adult financial outcomes.

1.7 What are the limitations of the study?

The 1970 British Cohort Survey is a very rich and comprehensive dataset, unique in that it tracks the same individuals over the last 47 years, collecting a wide range of information on their health, their physical, educational and social development, and their economic and labour market circumstances, as well other characteristics, at different ages.

However, there are some limitations it brings to this study, namely:

- The BCS70 is a cohort survey that tracks the development of a set of individuals born in a single week in 1970, and as such it does not represent the entire population of today's adults. Moreover, external socio-economic factors which influence some of the skills and outcomes explored in this study might have taken place subsequently (eg, policies aimed at encouraging pension saving such as auto-enrolment; lower financial self-assessment in a recession; changes to the education system). Such changes may cause the link between skills and adult financial outcomes to change over time. Consequently, the relationships between skills and financial outcomes which this study explores within the 1970 cohort might not be the same for the young people of today. This is an inherent limitation of cohort studies, and cannot feasibly be overcome (Mostafa and Wiggins, 2014).
- Some of the measures of skills are not comparable between ages 5, 10 and 16, due to changes in the information collected in different waves of BCS70. We have used comparable information wherever available.
- There are fewer study participants for whom information is available at age 16 compared to ages 5 and 10, as not all questions were answered by all survey respondents. The implication of this smaller sample size is that there is more uncertainty around the results at age 16 as it is more difficult to pick up significant effects. Despite this uncertainty, the analysis nonetheless identified some statistically significant results at this age.
- Despite the wide range of information collected by the BCS70, it is still possible that there are some underlying unobservable factors that drive both skills and financial outcomes. This is a potential issue in every study of this sort. However, the wide range of variables included in the analysis increases the confidence that the reported associations represent robust relationships between skills and financial outcomes.

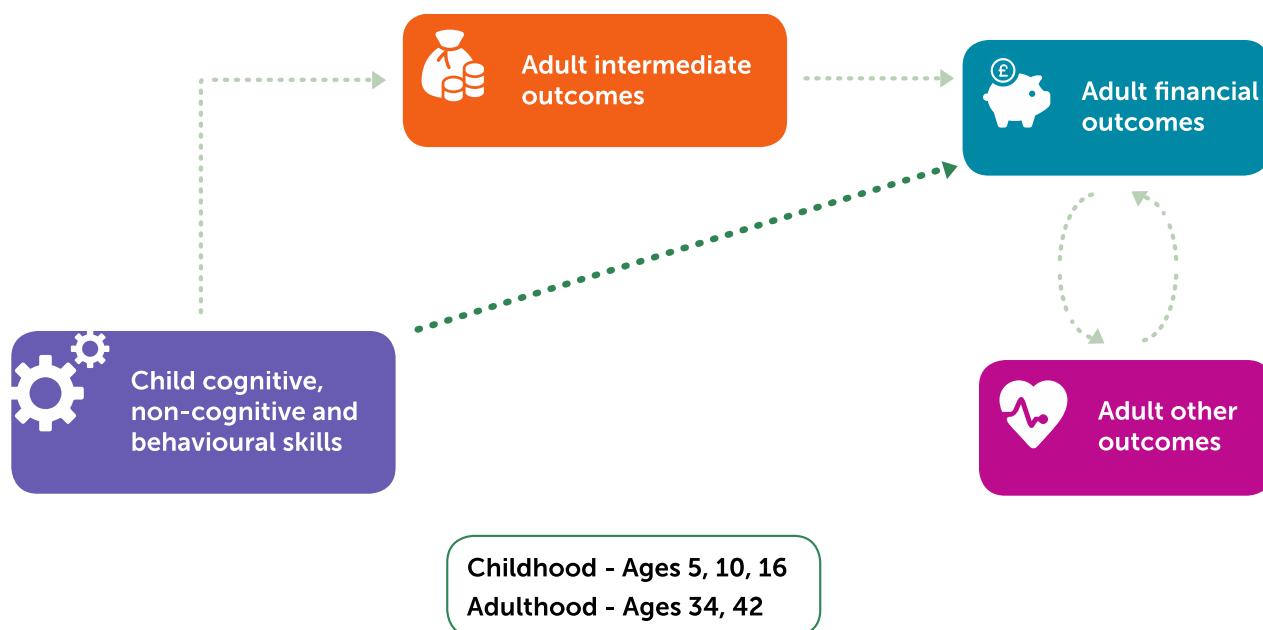
Despite these limitations, the analyses suggest a strong link between skills in childhood and outcomes in adulthood. Even though the results might not apply in the same way to today's children, this study does represent their parents, and a result may provide a valuable insight into the links between skills in childhood and adult outcomes and the factors which might influence these links.

Chapter 2 – What is the relationship between childhood skills and adult financial outcomes?

2.1 Which skills drive financial outcomes and at what ages?

Summary of results

- **Cognitive skills, non-cognitive skills and behaviour** at ages 5, 10 and 16 are predictors of a range of adult financial outcomes. For example, if we compare two children with the same personal and family background characteristics, the individual with higher skill levels is more likely to have positive financial outcomes in later life.
- The links between skills and financial outcomes tend to **strengthen with age**, with the strongest links observed with skills at age 16. Some of the relationships appear to embed at age 10, suggesting a **turning point at primary school age**.



The first strand of analysis explored the relationship between cognitive skills, non-cognitive skills and behaviour in childhood, and financial outcomes at ages 34 and 42.

Table 3 presents the results. Green shading indicates a positive and statistically significant relationship between the childhood skill and the adult financial outcome (ie, the relationship appears strong enough that it is unlikely be the result of random chance). The darker the colour, the stronger the link. A white cell indicates that no relationship was found.

Overall, the table suggests a number of positive links between childhood skills and adult financial outcomes. Cognitive skills, non-cognitive skills and behaviour are all shown to be predictors of a range of adult financial outcomes.

Note on the methodology

The results in this section, illustrating the links between childhood skills and adult outcomes, were obtained using regression analysis. This analysis allows us to control for childhood personal and family background characteristics in order to isolate the impact of childhood skills on adult financial outcomes for individuals who are otherwise identical.

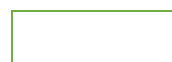
Table 3: Relationships between childhood skills and adult financial outcomes

Skill measure		Regular saving (age 34)	Pension saving (age 34)	Low debt-to-income ratio (age 42)	Net wealth (age 42)	Financial self-assessment (age 34)	Financial self-assessment (age 42)
Age 5	Cognitive skills						
	Non-cognitive skills	- - - - - Not captured at age 5 - - - - -					
	Behaviour						
Age 10	Cognitive skills						
	Non-cognitive skills						
	Behaviour						
Age 16	Cognitive skills						
	Non-cognitive skills						
	Behaviour						

Legend:



Statistically significant link found
Weaker link → stronger link¹⁹



No statistically significant link found (ie, the link is too small to be distinguished from random chance)

2.1.1 Age 5

Even at the early age of 5, we identify positive relationships between:

- cognitive skills and adult financial outcomes such as regular saving, pension saving, net wealth and financial self-assessment;
- behaviour and pension saving and debt-to-income ratio later in life.

It is remarkable that a specific adult financial outcome, such as pension saving at age 34, can be predicted to any extent using information captured almost three decades previously when the child was aged 5. However, this is consistent with a considerable volume of previous research (some of it using BCS70) that was discussed in the introductory section, which illustrated the link between early childhood skills and outcomes later in life (with much of the literature focused on labour market outcomes in particular). Non-cognitive skills were not assessed in the age 5 wave of BCS70 and cannot therefore be compared.

¹⁹ Three shades of green are used to indicate three different levels of strength, to enhance readability. The full results are provided in the Technical Appendix.

2.1.2 Age 10

At age 10, we identify positive relationships between:

- cognitive skills and multiple adult financial outcomes such as regular saving, pension saving and financial self-assessment;
- non-cognitive skills and adult financial outcomes such as regular saving, pension saving, net wealth and financial self-assessment;
- behaviour and pension saving.

2.1.3 Age 16

At age 16, we identify positive relationships between:

- cognitive ability and the likelihood of saving for a pension at age 34;
- non-cognitive skills and financial self-assessment at ages 34 and 42;
- behaviour and pension saving, having a lower debt-to-income ratio, and financial self-assessment.

Moreover, as Table 3 indicates, the financial outcomes which overall demonstrate the **strongest link with childhood skills** are **pension saving** at age 34 and **financial self-assessment** at ages 34 and 42. The other outcomes were found to be linked to some childhood skills – but to a lesser extent.

2.1.4 Are there turning points at certain ages?

As part of the analysis, we attempted to identify the ages at which the links between skills and financial outcomes strengthen. However, these results should be treated as indicative due to caveats around changes in the information collected in different waves of BCS70. As noted in Section 1.7, the individual skills are not exactly consistent at ages 5, 10 and 16, with the consequence that composite measures of cognitive and non-cognitive skills are also not perfectly comparable between ages. This means it is possible that relationships between skills and adult financial outcomes might be evident at one childhood age but not at another.

Bearing these caveats in mind, we have compared the results at ages 5, 10 and 16, and produced some indicative findings suggesting that the positive links between skills and financial outcomes tend to strengthen with age:

- The positive link between cognitive skills and adult financial outcomes strengthens between the ages of 5, 10 and 16.
- Similarly, the positive links between behaviour and financial outcomes also tend to strengthen with the age at which behaviour is assessed. This may suggest a level of **entrenchment** in behaviour, with the absence of behavioural issues having an increasing impact on positive adult outcomes as the young person develops into adulthood.
- In contrast, non-cognitive skills at age 10 are a predictor of a greater number of positive financial outcomes than non-cognitive skills at age 16. This result may be driven by changes in the construction of the overall non-cognitive skill measures between age 10 and 16 (as described in Section 1.5.2). For example, the age 16 measure does not include self-control, which the analysis presented in Section 2.2 shows to be a significant driver (at age 10) of many financial outcomes.
- A number of the stronger impacts appear at age 10. This suggests a turning point between the age of 5 and 10 in terms of the link between skills and outcomes.

2.2 Which individual skills have the greatest link with adult financial outcomes?

Having observed links between the composite cognitive skills, non-cognitive skills and behaviour measures in childhood, and

Summary of results

Some individual skills are found to have a greater link with adult financial outcomes than others:

- **Both the reading score and the maths score** drive the link between the cognitive skills at age 10 and adult financial outcomes to a comparable extent. There is no evidence to suggest that one is more important than the other.
- **Self-control** and **locus of control** (and self-esteem to a lesser extent) are the non-cognitive skills with the greatest link to adult financial outcomes.
- **Extraversion** and **agreeableness** are the personality traits that drive the relationship between behaviour at age 16 and adult financial outcomes.

financial outcomes in adulthood, the next step of the analysis was to examine whether any particular underlying individual skills drive the link between composite childhood skills and financial outcomes in later life.

Table 1 in Chapter 1 showed the individual skills used to construct each composite skill measure. The tables in this section illustrate the individual skills shown to have a link with a particular financial outcome, even after accounting for all other skills measured at that age and individual personal and family background characteristics. The individual skills presented in these tables are therefore strong drivers of the relationships between composite skills and adult financial outcomes identified in Section 2.1.

In some cases, whereas the previous analysis showed a link between a composite skills and an adult financial outcome, no link was found between any of the individual skills and the adult financial outcome. This may indicate that it was the combination of skills that matter most (with the individual skills being intricately related), rather than any one individual skill component.

Overall, the analysis suggests that a range of individual skills drive the positive links between childhood skills and adult financial outcomes discussed earlier in this chapter. However, again it should be noted that the set of skills measures assessed and captured in BCS70 changes over time, meaning that the available skills differ by age. For this reason, comparison across ages is challenging.

Note on the methodology

The methodology applied was as described in Section 2.1 with the difference that for each childhood age, all available individual skill components were added to the models in place of the composite skills measures. This allowed us to identify the impacts of individual skills components.

2.2.1 Which cognitive skills drive the results?

Table 4 shows the individual cognitive skills that drive the positive link with adult financial outcomes.

Table 4: Relationships between cognitive skills and adult financial outcomes

Cognitive skills	Regular saving (age 34)	Pension saving (age 34)	Low debt-to-income ratio (age 42)	Net wealth (age 42)	Financial self-assessment (age 34)	Financial self-assessment (age 42)
Age 5	Copy designs test	Copy designs test I.T.A. ²⁰		Copy designs test	Copy designs test	Copy designs test
Age 10		Reading score		Maths score		
Age 16 ²¹	-	-	-	-	-	-

At **age 5**, the **copy designs** test score stands out as the cognitive skill most frequently linked to adult financial outcomes. This may suggest that the copy designs test is the most effective test (of those used at age 5 in BCS70) for capturing some underlying characteristic linked to adult financial outcomes (such as true cognitive ability or a tendency towards general rule-obeying) at this young age. Such interpretation is more sensible than concluding that there is an especially meaningful link between the activity of copying designs as a 5-year-old and pension saving at age 34.

Looking at the cognitive skills at **age 10**:

- **Reading score** is positively linked with pension saving at age 34.
- **Maths score** is positively linked with net wealth at age 42.²²
- Reading score has a link with pension saving while maths score has a link with net wealth. Across the range of financial outcomes considered in this analysis, there is no evidence to suggest that the impact of the maths score is stronger than the impact of the reading score, or vice versa.

²⁰ Initial Teaching Alphabet was a system for learning to read and write used in some English schools in the 1960s. It is possible that the positive impact associated with the I.T.A is linked to characteristics of the schools with I.T.A rather than any specific skills developed through I.T.A. Further, the I.T.A is no longer in use in schools which means that this result has less relevance for informing policy today.

²¹ At age 16, since the composite cognitive skill measure is based on the level of academic qualification achieved (ie, O-levels or equivalent), this measure cannot be broken down into individual skills components in the same way.

²² This is despite the link between the composite cognitive skill measure and net wealth *not* being large enough to be reliably distinguished from random chance. This may be because of a negative relationship between other individual cognitive skills and the outcome, or because the composite cognitive skill measure does not represent enough of the variation of individual cognitive skills. In this case, the combination of individual skills would obscure the link between maths and net wealth.

2.2.2 Which non-cognitive skills drive the results?

Table 5 shows which individual non-cognitive skills drive the positive link with adult financial outcomes.

Table 5: Relationships between non-cognitive skills and adult financial outcomes

Non-cognitive skills	Regular saving (age 34)	Pension saving (age 34)	Low debt-to-income ratio (age 42)	Net wealth (age 42)	Financial self-assessment (age 34)	Financial self-assessment (age 42)
Age 5	- - - - - Not captured at age 5 - - - - -					
Age 10	Locus of control Self-control	Self-control	Self-esteem	Locus of control Self-esteem	Self-control	Locus of control Self-control
Age 16					Locus of control	

At **age 10**, across many of the adult financial outcomes, self-control and locus of control (and, to a lesser extent, self-esteem) are regularly found to drive the link with the composite non-cognitive skill measure.

- In particular, **locus of control** is positively linked to regular saving at age 34 and net wealth and financial self-assessment at age 42.
- **Self-control** is positively linked to savings behaviour age 34 and financial self-assessment at ages 34 and 42.
- **Self-esteem** is positively linked to a low debt-to-income ratio at age 42 and to higher net wealth at age 42.

At **age 16**, the **locus of control** component of the non-cognitive skills measure is shown to be positively linked to financial self-assessment at age 34.

2.2.3 Which individual behavioural skills drive the results?

As discussed in Section 1.5.2, the composite behavioural measure is based on parents' responses to a series of questions on the child's behaviour. These questions can be used to construct personality traits at ages 10 and 16, which we consider in this analysis. Table 6 shows the personality traits that drive the positive link with adult financial outcomes.

Table 6: Relationships between individual behavioural skills and adult financial outcomes

Behaviour	Regular saving (age 34)	Pension saving (age 34)	Low debt-to-income ratio (age 42)	Net wealth (age 42)	Financial self-assessment (age 34)	Financial self-assessment (age 42)
Age 5 ²³	-	-	-	-	-	-
Age 10						
Age 16		Extraversion	Agreeableness			Extraversion

Although there is a link between behaviour at age 10 and pension saving at age 34, no single individual personality trait appears to be driving this link.

At age 16, the **extraversion** component of behaviour is shown to be positively linked to pension saving at age 34 and financial self-assessment at age 42. **Agreeableness** appears to drive the relationship between behaviour at age 16 and a low debt-to-income ratio at age 42.

No individual behavioural skills are found to drive the link with regular saving. This contrasts to Prevoo and Ter Weel (2013), who found that emotional stability and conscientiousness impact one's saving probability positively, whereas extraversion does so negatively. This may be due to slight differences between the two studies in the savings indicator used. Prevoo and Ter Weel considered whether an individual saves any amount of their monthly income other than to meet regular bills. The indicator used in this analysis considers whether the individual saves *regularly* rather than occasionally.

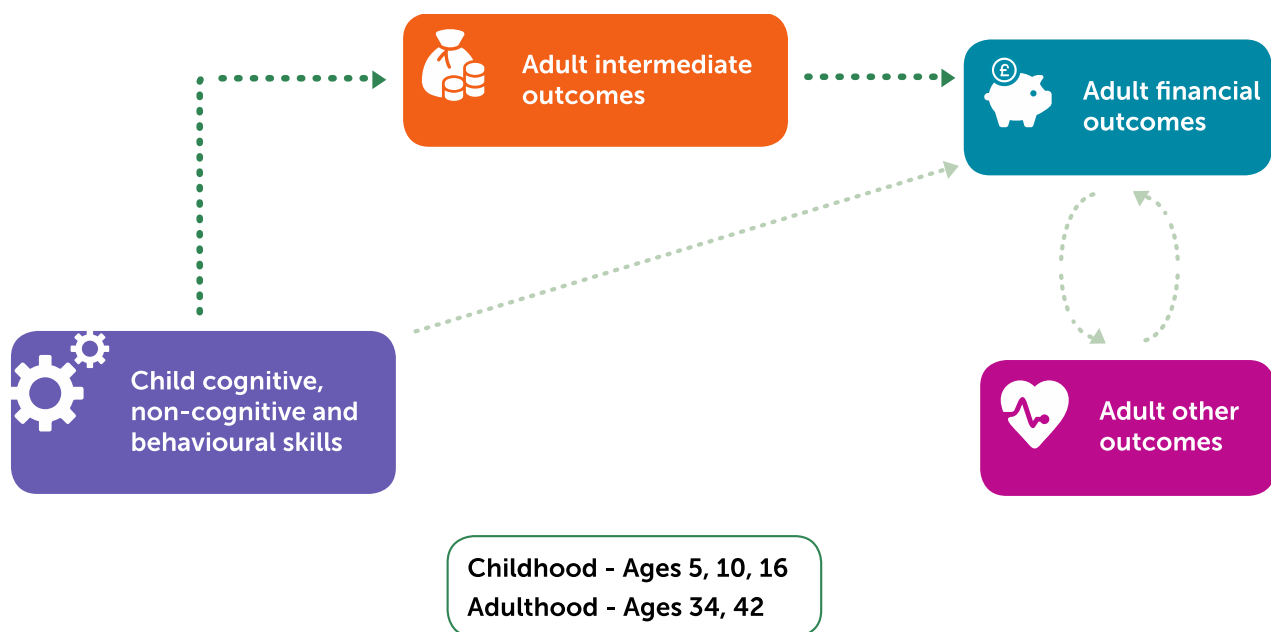
²³ As noted in Section 1.5.2, it was not possible to use the same approach to construct personality traits at age 5.

Chapter 3 – What are the pathways from childhood skills to adult financial outcomes?

From childhood to adulthood, there are countless pathways that an individual can take. To better understand the **journey between childhood skills and adult outcomes**, this section explores the role of certain **intermediate outcomes**: things that occur between childhood and the ages when adult financial outcomes are observed – such as educational attainment, employment status, marital status, income and home ownership.

Intermediate outcomes could potentially **channel the link** between childhood skills and adult financial outcomes. An example of this would be a child with higher cognitive skills being more likely to attend university, which itself is linked to a higher likelihood of pension saving. This is explored in Section 3.1.

Section 3.2 investigates whether these intermediate outcomes can act as **pathways that protect children** from adverse financial outcomes in adulthood, in that achievement in these areas would raise the likelihood of positive outcomes for children of **all skill levels**.



The types of intermediate outcomes considered in this report are:²⁴

- educational attainment – represented by the highest level of qualification (vocational and academic) achieved;
- employment status – whether employed or self-employed or not;
- marital status – whether married or not;
- home ownership – whether a home owner or not;
- income – annual level of personal income.

²⁴ The analysis investigated a wider set of intermediate outcomes: whether economically active or not; whether in full-time or part-time employment; whether in full-time or part-time employment; whether divorced or not; whether there are any dependent children in the household, as well as the number of children. The Technical Appendix provides the full set of findings.

3.1 Which pathways channel the link between skills and adult financial outcomes?

Summary of results

- **Educational attainment** and **employment status** often *channel* the link between childhood skills and adult financial outcomes. For example, a child with higher cognitive skills is more likely to attend university, which itself is linked to a higher likelihood of pension saving. Marital status and income appear less frequently as channels.
- There are some cases which indicate a **more direct relationship** between skills (particularly at age 16) and financial outcomes, such as:
 - the link between **behavioural skills** and the **debt-to-income** ratio;
 - many of the links between **skills** and **financial self-assessment**; and
 - the link between **cognitive skills** and **pension saving**.

For example, if we compare two individuals with the same educational attainment, personal characteristics and family background, the individual with lower childhood skills is more likely to experience adverse financial outcomes in adulthood.

A fuller understanding of the role of intermediate outcomes reveals more about the nature of the link between childhood skills and adult financial outcomes. For example, it was shown in Section 2.1 that a child with better skills is more likely to save for a pension in adulthood. However, it is possible that this link is observed because higher skills may be positively linked with university attendance, which itself is a predictor of pension saving. Once we control for educational attainment, it may be the case that childhood skills do not have a link with pension saving, beyond that which is channelled through education. In this case, university attendance could be said to *channel* the impact of skills on pension saving.

By examining the role of intermediate outcomes such as education, we understand more about the journey from childhood skills to adult financial outcomes. In some cases, the links are expected to be explained by the journey taken, while in others, the link between childhood skills and adult financial outcomes will remain strong regardless of journey.

Note on the methodology

The methodology used to produce the results discussed in this section was as described in Section 2.1, with the addition of intermediate outcomes to the models. This allowed us to control for the impact of intermediate outcomes and to isolate the impact of childhood skills on adult financial outcomes.

- Where an intermediate outcome is identified as a **channel**, this indicates that there was no statistically significant link between childhood skills and adult financial outcomes once intermediate outcomes were controlled for.
- Where there was a statistically significant link between childhood skills and adult financial outcomes, even when controlling for intermediate outcomes, this was evidence of a **more direct link** between childhood skills and adult financial outcomes.

3.1.1 Which pathways channel the link between cognitive skills and adult financial outcomes?

Table 7 presents the intermediate outcomes which appear to channel the impact of cognitive skills. This table uses the same results shown in Section 2.1 of the report (indicated by shading – and representing the links between the composite cognitive skill measures and adult financial outcomes) but **overlays the names of the intermediate outcomes shown to channel the impact of cognitive skills** on each adult financial outcome.

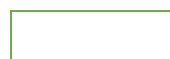
Table 7: Intermediate outcomes as channels for the link between cognitive skills and adult financial outcomes

Cognitive skills	Regular saving (age 34)	Pension saving (age 34)	Low debt-to-income ratio (age 42)	Net wealth (age 42)	Financial self-assessment (age 34)	Financial self-assessment (age 42)
Age 5	Educational attainment Employment Home owner	Educational attainment		Educational attainment	Educational attainment Employment Income Home owner Marriage	Educational attainment Employment Home owner
Age 10	Educational attainment				Educational attainment Income	
Age 16						

Legend:



Statistically significant link previously found
Weaker link → stronger link



No statistically significant link previously found (i.e. the link is too small to be distinguished from random chance)

Table 7 shows that at age 5 the links between cognitive skills and adult financial outcomes appear to be channelled through an intermediate outcome in many cases. In fact, **educational attainment** alone is found to channel each of the links between cognitive skills at age 5 and adult financial outcomes. This implies that one of the reasons that the child with better cognitive skills at age 5 is more likely to end up saving for a pension in adulthood is because they are also more likely to attend university, which itself is linked to a higher likelihood of pension saving. Educational attainment also channels the link between cognitive skills at age 10 and the financial outcomes of regular saving and financial self-assessment at age 34.

Table 7 also shows that in some cases, other intermediate outcomes, such as employment, owning a home and income levels, also act as intermediaries of cognitive skills.

However, there are some cases where even when controlling for each of the intermediate outcomes, the link between cognitive skills and adult financial outcomes seems to persist.²⁵ This implies that the relationship between cognitive skills and these outcomes is more direct, and that cognitive skills play a larger role in achieving a positive financial outcome beyond their link with the intermediate outcomes. This is the case for:

- cognitive skills at age 10 and age 16 and pension saving at age 34;
- cognitive skills at age 10 and financial self-assessment at age 42.

²⁵ Although it should be noted that the link could potentially be channelled through some intermediate outcome that we have not been able to include in the analysis.

3.1.2 Which pathways channel the link between non-cognitive skills and adult financial outcomes?

Table 8 shows the intermediate outcomes which appear to channel the links between non-cognitive skills and adult financial outcomes.

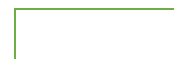
Table 8: Intermediate outcomes as channels for the link between non-cognitive skills and adult financial outcomes

Non-cognitive skills	Regular saving (age 34)	Pension saving (age 34)	Low debt-to-income ratio (age 42)	Net wealth (age 42)	Financial self-assessment (age 34)	Financial self-assessment (age 42)
Age 5	- - - - - Not captured at age 5 - - - - -					
Age 10	Educational attainment Employment Home owner Marriage	Employment Home owner				
Age 16					Educational attainment	

Legend:



Statistically significant link previously found
Weaker link → stronger link



No statistically significant link previously found (i.e. the link is too small to be distinguished from random chance)

While educational attainment was the most frequent channel for the link between cognitive skills and financial outcomes, this is less the case for non-cognitive skills. As Table 8 indicates, other intermediate outcomes which channel the link between non-cognitive skills and some of the adult financial outcomes are employment, owning a home and marriage.

In the following cases, while intermediate outcomes are linked to both childhood skills and adult financial outcomes, there is a persistent link between non-cognitive skills and financial outcomes:

- non-cognitive skills at age 10 and net wealth and financial self-assessment at ages 34 and 42;
- non-cognitive skills at age 16 and financial self-assessment at age 42.

3.1.3 Which pathways channel the link between behaviour and adult financial outcomes?

Table 9 presents the intermediate outcomes channelling the links between behaviour and adult financial outcomes.

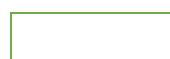
Table 9: Intermediate outcomes as channels for the link between behaviour and adult financial outcomes

Behaviour	Regular saving (age 34)	Pension saving (age 34)	Low debt-to- income ratio (age 42)	Net wealth (age 42)	Financial self- assessment (age 34)	Financial self- assessment (age 42)
Age 5		Educational attainment Employment	Income			
Age 10		Employment				
Age 16						

Legend:



Statistically significant link previously found
Weaker link → stronger link



No statistically significant link previously found (i.e. the link is too small to be distinguished from random chance)

Intermediate outcomes that channel the link between behaviour at ages 5 and 10 include educational attainment, employment and income. At **age 16** however, the link persists even when controlling for an intermediate outcome such as employment, education or income. This indicates that there is a more direct link between behaviour and adult financial outcomes. At this age, the links between behaviour and the adult financial outcomes are strongest.

The tables above demonstrate that educational attainment and employment status are the most frequent intermediaries of the link between childhood skills and adult financial outcomes. Other intermediate outcomes, such as income, are found to be channels of these relationships less often.

As discussed earlier in this section, in some cases, none of the intermediate outcomes tested were found to channel the relationship between a particular skill and a financial outcome. This does not mean there is no link between the intermediate outcome and the financial outcome, or between the childhood skill and the intermediate outcome, but simply that the intermediate outcome is not the channel of the link between the childhood skill and the financial outcome.

3.2 What pathways protect against adverse financial outcomes?

Summary of results

Educational attainment and **employment** (and other intermediate outcomes that channel the link between childhood skills and adult financial outcomes) are pathways that protect children from adverse financial outcomes in adulthood - achievement in these areas raises the likelihood of positive outcomes for children of **all cognitive skill levels**.

Focusing only on **children with low skills** at age 10, the following protective pathways are found:

- A **high level in one skill** can in many cases compensate for a low level in **another skill**.
- **Vocational education** and **employment** (particularly paid employment) can both moderate the effect of **low cognitive skills**.
- High levels of **qualifications** and **academic education**, **employment** and having a **skilled occupation** can compensate for **low non-cognitive skills**.

3.2.1 What pathways protect against adverse financial outcomes generally?

We have established that individuals with lower levels of skills in their childhood are on average more likely to face adverse financial outcomes later in life. This section of the report aims to identify the pathways that can compensate for lower skills and thereby protect an individual from adverse financial outcomes.

The previous section of the report presented a discussion of certain intermediate outcomes that channel the link between childhood skills and financial outcomes in adulthood. Educational attainment and employment are the two intermediate outcomes which most often channel the link between childhood skills and adult financial outcomes. We could equally say that **educational attainment and employment (and other channels) are important pathways that protect children** from adverse financial outcomes in adulthood.

For example, we found that the relationship between cognitive skills at age 10 and regular saving at age 34 is channelled through educational attainment. In other words, even when taking the child's cognitive ability at age 10 into account, it is educational attainment (rather than cognitive ability) that determines future savings behaviour. Higher educational attainment increases the likelihood of being a regular saver for children of **all cognitive skill levels**. In this sense, higher educational attainment can protect children from adverse financial outcomes in adulthood. Section 2.1 concluded that children with low ability are more likely to face adverse financial outcomes in adult life. In addition, a child with lower cognitive skills is also less likely to attend university in the first place, which raises a question of whether educational attainment is an effective protective pathway for children with lower cognitive skills. This motivated us to repeat the analysis **for the group of individuals with the lowest skills**, to identify which of the protective pathways can effectively help low-skilled individuals achieve better financial outcomes than otherwise expected.

3.2.2 Which protective pathways are effective for low-skilled individuals?

In this section, we focus on the set of individuals who have **lower skills at age 10** – the age at which the link with skills begins to embed. If the impact of a particular protective pathway on financial outcomes is also evident when the analysis is produced only for low-skilled individuals, then this protective pathway is effective among those with low ability in childhood. Such pathways can help lower-skilled children 'buck the trend' in terms of achieving better-than-expected financial outcomes.

To investigate which protective pathways are effective amongst the lower-skilled, we considered a wider range of potential protective pathways to that in Section 2.1.3:

- level of education;
- educational path (whether the highest level of qualification achieved is of vocational or academic type);
- employment mode – ie, paid or self-employment;
- type of employment;
- higher levels of other skills.

Note on the methodology

This strand of analysis focuses on individuals in the bottom 20% of the skills distribution. The same methodology as in **section 3.1.** was followed for the low-skilled group. Where the link between the protective pathway and financial outcomes is still statistically significant, the protective pathway is effective among the lower-skilled group.

The analysis for this strand was performed only where a link between childhood skills and financial outcomes was found (as presented in Table 3). The results shown overleaf are those where we found the **protective pathways were successful for the low-skilled groups in terms of improving individuals' financial outcomes.**

Which protective pathways are effective for individuals with low cognitive ability at age 10?

Previous sections of the report found that having low cognitive ability at age 10 is associated with worse savings behaviour at age 34 and worse financial self-assessment at age 42.

Our analysis finds that some pathways, summarised in Table 10, are effective at protecting against these adverse outcomes for individuals with lower cognitive skills. For example, the analysis finds that **the vocational education path of qualification attainment** is an effective protective pathway against an adverse pension savings outcome and low levels of financial self-assessment for children with low cognitive skills.

Table 10: Which protective pathways are effective for individuals with low cognitive ability at age 10?

	Regular saving (age 34)	Pension saving (age 34)	Financial self-assessment (ages 34 & 42)
Low cognitive ability	High childhood behavioural skills Qualifications (up to but excluding Masters and higher), both vocational and academic Paid employee	High childhood non-cognitive skills High childhood behavioural skills High levels of qualifications (Bachelor's) ²⁶ Vocational education Non-manual skilled job Paid employee	High childhood non-cognitive skills Qualifications at NVQ level 3 (A-level, BTEC or equivalent) Vocational education Employment (both self-employment and paid employment)

Which protective pathways are effective for individuals with low non-cognitive ability at age 10?

Individuals with low non-cognitive ability at age 10 were previously found to be less likely to save regularly and for a pension, and were associated with lower levels of financial self-assessment at ages 34 and 42. For example, Table 11 shows that obtaining an **academic type of qualification** can prevent children with low non-cognitive skills from not saving regularly when they are 34; and obtaining **higher levels of qualifications** is an effective way to protect children with low non-cognitive skills at age 10 from low levels of financial self-assessment.

²⁶ 15% of the respondents with low cognitive ability (measured at age 10) proceeded to obtain a Bachelor's qualification or higher, compared to 43% of the respondents with higher cognitive skills.

Table 11: Which protective pathways are effective for individuals with low non-cognitive ability at age 10?

	Regular saving (age 34)	Pension saving (age 34)	Financial self-assessment (age 34 & 42)
Low non-cognitive ability	High childhood cognitive skills Academic education Qualifications at GCSE level or equivalent Paid employee	High childhood cognitive skills High childhood behavioural skills Educational attainment Paid employment Skilled (manual or non-manual), managerial or professional occupation	High childhood cognitive skills High childhood behavioural skills High levels of qualifications (GCSE +), both academic and vocational Employment (both self-employment and paid employment) Managerial-technical type of job

Which protective pathways are effective for individuals with low behavioural scores at age 10?

Previous parts of the analysis identified that good behaviour at age 10 was linked only to individuals' propensity to save at age 34. Table 12 demonstrates that multiple pathways are effective at protecting those with poor behaviour at age 10 from the outcome of not saving for a pension in later life. These include pathways such as educational attainment and better employment outcomes.

Table 12: Which protective pathways are effective for individuals with low behavioural scores at age 10?

	Regular saving (age 34)	Pension saving (age 34)	Financial self-assessment (age 34 & 42)
Low behavioural score	No link found between skill and financial outcome	High childhood cognitive skills High childhood non-cognitive skills Educational attainment Paid employee Skilled (manual or non-manual), managerial or professional occupation	No link found between skill and financial outcome

Which protective pathways are particularly effective for low-skilled individuals compared to high-skilled individuals?

Some of the protective pathways listed in the tables above are effective not only for individuals with low skills, but for also for individuals with higher level of skills. However, certain protective pathways are more effective at preventing low-skilled children from adverse financial outcomes than they are for children with higher skills.

Going down the vocational education path has resulted in higher improvements in terms of the likelihood to save for a pension for children with low cognitive skills compared to children with higher cognitive skills. Therefore, **vocational education** can be considered a particularly effective protective pathway for children with **low cognitive skills**.

For children with **low non-cognitive skills**, all types of educational attainment are effective protective pathways against poor pension saving behaviour. However, the **academic educational track** is particularly effective for this group of children compared to children with higher non-cognitive skills.

Chapter 4 – What is the impact of personal and family background characteristics?

Summary of results

In addition to childhood skills, **personal and family background characteristics** during childhood can also be linked to adult financial outcomes. Some subgroups of survey participants, such as **female participants**; those who grew up in a **household with more than three children**; and those with **less educated parents** are at higher risk of experiencing adverse financial outcomes in adulthood.

It is also possible that the **influence of childhood skills** on adult financial outcomes is **greater for some of the ‘at risk’ demographic subgroups**. For example, cognitive skills have a stronger link with **female participants’** regular saving (at age 34) than for male participants’, and behaviour has a stronger link with the financial outcomes of individuals who have grown up in **households with three or more children**.

4.1 Are any demographic subgroups more at risk of having adverse financial outcomes?

So far, the report has discussed only the impact of skills and intermediate outcomes on financial outcomes in adulthood. The discussion of results has always compared children with the same personal and family background characteristics.

This section of the report focuses on the **role of personal and family background characteristics at age 10** on financial outcomes of BCS70 individuals in their adulthood, while controlling for skills. It explores which subgroups of children were at higher risk of adverse financial outcomes in adulthood. This was achieved by analysing whether children with particular personal or family background characteristics were more likely to end up with adverse financial outcomes in adulthood compared to other children with similar level of skills, but with different personal or family background characteristics.

Note on the methodology

The results in Table 13 were obtained using the a regression-analysis approach similar to that used to generate the results discussed in Section 2.1, including a similar set of control variables throughout. The difference is that here, the coefficients of interest are not those of the skills variables, but instead those of the control variables – namely the childhood personal and family background characteristics (gender, ethnicity, household size, parents’ education and employment status, social class and family income, and child-rearing attitudes).

It should be noted that some of the **personal and family background characteristics are strongly interrelated**. For instance, children whose parents have lower levels of education are likely to come from lower-income families, and more likely to have grown up in families with more children. Because these interrelated characteristics are considered at the same time, it is possible that existing differences in financial outcomes between certain subgroups diminish once the full set of characteristics are considered. This can explain why, for example, coming from a low-income family seems to put individuals at higher risk only in terms of one financial outcome, but low levels of paternal education put individuals at risk in terms of most financial outcomes; and why mothers’ educational levels seem not to matter for children’s future financial outcomes but fathers’ education does.

Table 13 summarises the **link between childhood personal and family background characteristics and financial outcomes in adulthood**. The table presents only the personal and family background characteristics found to have a link with financial


outcomes. Other characteristics for which the analysis controls are social class of the family, mother's education, mother's mental health (represented by her Malaise score²⁷), gestational time, small purchase skills, and small jobs skills.


Green shading indicates a positive and statistically significant relationship between the personal or family background characteristic in childhood and the adult financial outcome (ie, the relationship appears strong enough that it is unlikely to be the result of random chance). Pink shading indicates a negative and statistically significant relationship.


Table 13: Link between personal and family background characteristics and adult financial outcomes

Demographic group (vs. comparison) at age 10	Regular saving (age 34)	Pension saving (age 34)	Low debt-to-income ratio (age 42)	Net wealth (age 42)	Financial self-assessment (age 34)	Financial self-assessment (age 42)
Female (vs male)						
Ethnicity: Indian, Pakistani or Bangladeshi (vs all other)						
Three or more children in household (vs fewer than three)						
Family income higher than the lowest bracket (vs in the lowest bracket)						
Parental employment: only 1 parent in regular employment (vs both parents) ²⁸						
Parental education: Father's highest qualification is O-levels (vs lower)						
Parental education: Father's highest qualification is A-levels or higher (vs lower)						

Legend:

 Demographic group has statistically significantly higher levels of financial outcome

 Demographic group has statistically significantly lower levels of financial outcome

 No statistically significant difference found in financial outcome between groups

Overall, the table suggests that children in certain subgroups according to their personal and family background characteristics face **higher risk of adverse financial outcomes**, regardless of their skills. For example, **female** respondents are less likely to save for a pension at age 34, and are likely to have lower net wealth at age 42, compared to male respondents with otherwise similar personal and family background characteristics and similar levels of skills.

Similarly, survey participants who grew up in a **household with three or more children** are less likely to save regularly at age 34, and more at risk of having lower financial self-assessment at age 34, compared to participants who grew up in households with fewer children. Children whose fathers' educational qualifications are below A-levels, are more at risk of not saving regularly and for a pension, and at risk of having a lower financial self-assessment score.

²⁷ The Malaise score is a set of self-completion questions which combine to measure levels of psychological distress, or depression.

²⁸ Children from families where both parents were unemployed were also compared to children whose both parents were in regular employment, but once all other personal and family background characteristics were included, no statistically significant differences were found in the financial outcomes of these two subgroups.

4.2 Are certain subgroups affected disproportionately by having different levels of skills?

The results so far have indicated that both childhood skills and personal and family background characteristics of the child can affect their future financial outcomes independently of each other. However, it is possible that the **link with childhood skills** and adult financial outcomes may be **greater for one demographic subgroup** than for another.

This section examines whether skills and personal and family background characteristics **interact with each other** in the way that they shape the child's financial future. If so, skills may have a greater link with financial outcomes for certain demographic groups, in which case policy interventions targeting skills may be more effective if targeted at certain groups.

This strand of the analysis was performed for a smaller set of personal and family background characteristics than the analysis presented above, where the wider academic literature and the Money Advice Service suggested hypotheses about potential differences. The childhood personal and family background characteristics investigated in this part of the analysis were:

- gender;
- home country of residence;
- number of parental figures and number of children in the household;
- social class, family income and parental employment.

Note on the methodology

The results discussed below were obtained using a regression analysis approach similar to that generating the results discussed earlier in this section. The key difference in this strand of the analysis is that the skills were *interacted* with a few personal and family characteristics of interest to explore interactions between skills and financial outcomes.

Across most subgroups, there is no substantial difference in the strength of the link between childhood skills and adult financial outcomes. However, there are some. The following discussion focuses only on demographic groups where the impact of skills on financial outcomes was found to be greater for one demographic subgroup than for another. It should be noted, however, that some of the emerging results reflect the social reality of the 1970s cohort but might not necessarily hold for the current generation of children. For instance, gender roles have changed; society in Scotland has changed; and social housing policies have changed. Nevertheless, it is important to understand the links between skills, personal and family background characteristics and financial outcome, as they have shaped the lives of the parents of today's children.

4.2.1 Female respondents

The results presented in Table 13 demonstrate that when comparing BCS70 individuals with the same levels of all childhood skills and the same personal and family background characteristics at age 10, female respondents are generally less likely to save for a pension, and will have on average lower net wealth. The relationship between skills and financial outcomes is also sometimes different for female respondents than for male respondents.

Cognitive skills have a stronger relationship with financial outcomes for female respondents compared to their male counterparts. This is the case for the propensity to **save regularly** (at age 34) and **financial self-assessment** (at ages 34 and 42), which are found to be linked to childhood cognitive skills for female respondents but not for male respondents. In contrast, **non-cognitive skills have a weaker relationship** with regular saving and financial self-assessment among female respondents than amongst male respondents.

Hence, improving cognitive skills might result in greater improvements in savings behaviour and financial self-assessment among female respondents than among male respondents; whereas improving non-cognitive skills would improve these outcomes to a greater extent for male respondents.

4.2.2 Growing up in a household with three or more children

Table 13 also demonstrated that individuals who grew up in a household with three or more children (at the time when they were 10 years old) are less likely to save regularly in adulthood, and are less likely to say they are managing well with their financial matters at age 34.

Moreover, **behaviour** has a **stronger relationship** with adult financial outcomes such as **regular saving, pension saving and financial self-assessment** (at age 34) among individuals who have grown up in households with three or more children compared to those from smaller households. In contrast, behavioural skills do not seem to be linked to these outcomes for individuals from smaller households.

A behavioural intervention around age 10 might therefore have a greater impact among children in larger households than among children in smaller households.

4.2.3 Growing up in Scotland

Further to the control variables included in the analysis so far, subgroup analysis was also performed by Home Nation of residence at age 10. Compared to individuals with similar characteristics who lived in England, individuals who lived in Scotland (at age 10) are more likely to save for a pension at age 34, whereas individuals who lived in Wales are less likely to do so.

The strength of the link between skills and adult financial outcomes for individuals who were raised in Scotland also differs. **Regular saving and financial self-assessment** at age 34 have a **stronger link with non-cognitive skills** at age 10 for individuals from Scotland compared to those from England and Wales, given otherwise similar levels of skills and other characteristics. In England and Wales, non-cognitive skills were not found to be linked to these two financial outcomes.

4.2.4 Growing up in rented social housing

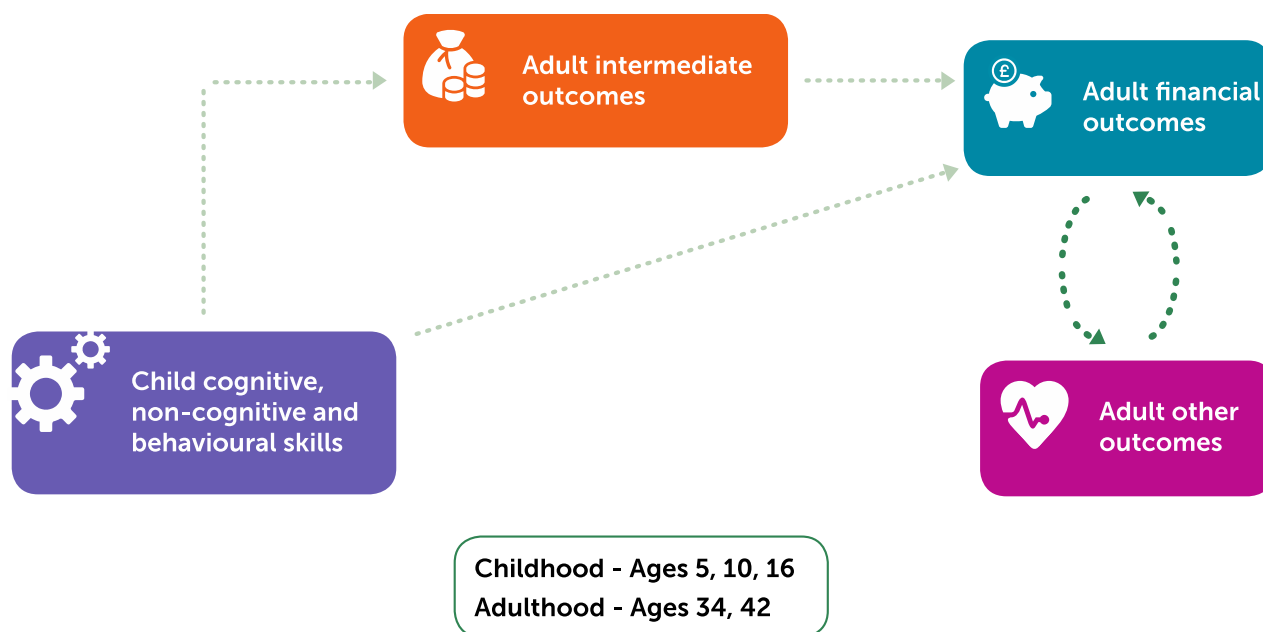
The results showed that children who grew up in social housing were less likely to save regularly as adults, and less likely to rate their financial situation positively at age 34, when compared to individuals whose families lived in other types of accommodation.

In addition, **cognitive skills** have a positive relationship with the propensity to **save regularly** only for individuals who lived in **social housing** in their childhood, but no such relationship is found for similar individuals whose families lived in other types of accommodation at age 10.

Chapter 5 – What is the relationship between adult financial outcomes and other adult outcomes?

Summary of results:

- This study has established a link between childhood skills and a range of adult financial outcomes representing financial capability. In this section, we examine what relevance these financial outcomes have for other important aspects of adult life, such as mental and physical health and life satisfaction.
- Adult financial outcomes are positively linked to many of the other outcomes considered. The strongest links are found with health self-assessment and life satisfaction, although links with mental health are also identified.
- For example, those with a low debt-to-income ratio at age 42 are more likely to rate their health higher, less likely to have a long-standing illness, and on average, have better life satisfaction. Equally, individuals with high amounts of debt-to-income levels are more likely to have health issues and will have on average lower life satisfaction.
- We use the presence of some outcomes across subsequent waves in BCS70 to test whether financial outcomes drive adult outcomes or vice versa. We observe many cases in which there is an interdependency between financial and other adult outcomes, in some cases it appears that financial outcomes drive the adult outcomes and vice versa.



In this section, we examine what relevance the financial outcomes we have been exploring have for other important aspects of adult life, these are:

- health self-assessment (an assessment of health in the previous year on a scale from 'poor' to 'excellent');
- absence of long-standing illness;
- life satisfaction (self-reported satisfaction with life so far);
- mental health (*Malaise score* indicating psychological distress or depression);
- mental wellbeing scale (*Warwick-Edinburgh Mental Wellbeing Scale* indicating feeling and functioning aspects of mental wellbeing);
- distance from the criminal justice system (whether the individual has had no contact with the police, including police cautioning, warning or arrest, and has not received a conviction in criminal court).

Note on the methodology

The results in this section were obtained using a regression analysis approach. This controls for adult personal and socioeconomic characteristics (gender, ethnicity, number of children, cohabitation status, education and employment status, mode and sector, social class, personal income, home ownership and region of residence), as well as the respondent's subjectivity (their confidence, optimism and self-efficacy). This allows us to isolate the links between financial and other outcomes for adults who are otherwise identical.

Since the information available in BCS70 changes across waves, there are some differences in the analysis performed at ages 34 and 42. Specifically, the mental wellbeing scale is not available at age 34 and the 'distance from crime' measure is unavailable at age 42. Further, different sets of financial outcomes are assessed at ages 34 and 42.

5.1 Which financial outcomes are linked to other adult outcomes?

Table 14 shows the links between financial and other adult outcomes at ages 34 and 42. Green indicates a positive link between the outcomes, and red indicates a negative link. The darker the colour, the stronger the link.

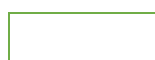
Table 14: Link between adult financial outcomes and other adult outcomes

	Health self-assessment	Absence of long-standing illness	Mental health	Life satisfaction	Distance from crime	Mental wellbeing scale
Regular saving (age 34)						-
Pension saving (age 34)						-
Financial self-assessment (age 34)						-
Low debt/income ratio (age 42)					-	
Net wealth (age 42)					-	
Financial self-assessment (age 42)					-	

Legend:



Positive statistically significant link
Weaker link → stronger link



No statistically significant link



Negative statistically significant link
Weaker link → stronger link

The analysis shows clear positive links between financial outcomes and many other adult outcomes. These links are present even when controlling for the adult's personal and family background characteristics.

The strongest links are found with health self-assessment, mental health and life satisfaction. This implies that if we were to compare two adults with the same personal and family background characteristics, the adult demonstrating better financial

capability is also more likely to say that their health over the last year has been good, and more likely to report higher life satisfaction. One might expect that these links between financial outcomes and other adult outcomes could operate in either direction. In other words, is it financial outcomes driving other adult outcomes or vice versa? This question is explored in Section 5.2.

Individuals with better financial self-assessment (ie, those who say they are managing well financially) are also associated with positive outcomes in terms of all the adult outcomes considered.

Pension savers and regular savers are more likely to:

- rate their health higher;
- have better mental health;
- have better life satisfaction;
- avoid contact with the criminal justice system.

Individuals with a low debt-to-income ratio are:

- more likely to rate their health higher;
- less likely to have a long-standing illness;
- more likely to have better life satisfaction.

This also means that individuals with high amounts of debt compared to their income are more likely to have these health issues, and will on average, have lower life satisfaction. In this analysis, no link was found between the debt-to-income ratio and mental health outcomes or the mental wellbeing scale. This is in contrast to other research that finds that over-indebtedness and mental health problems are intricately linked with both negatively influencing the other.²⁹ The difference may be due to the specific debt-to-income measure used in this analysis which reflects the size of debt relative to income but may not fully reflect the perceived burden of debt. Although this analysis has not found links between the debt-to-income ratio and mental health, it has unearthed strong links between financial self-assessment and mental health.

Net wealth is positively linked to health self-assessment and life satisfaction, although it appears to have a (weak) negative link with the mental wellbeing scale.

5.2 Do financial outcomes drive adult outcomes or vice versa?

The results in this section show a link between financial outcomes and other adult outcomes observed at the same point of time in a person's life. This raises the question of the direction of the relationship – whether financial outcomes drive adult outcomes, or vice versa. This section of the report uses the presence of some outcomes (health self-assessment, absence of long-standing illness, mental health and life satisfaction) across subsequent waves of the BCS70 dataset to explore this to the extent possible given data availability in the BCS70.³⁰

For example, if regular saving at age 34 was found to be positively related to health self-assessment at age 42 even after accounting for prior health self-assessment at age 34 and other adult characteristics, then it can be said that regular saving has a link with health self-assessment. If, furthermore, health self-assessment at age 34 did not have a statistically significant relationship with regular saving at the same age (again in the presence of other controls), this suggests that it is more likely that the propensity to save regularly does impact a person's self-assessment rather than the reverse.

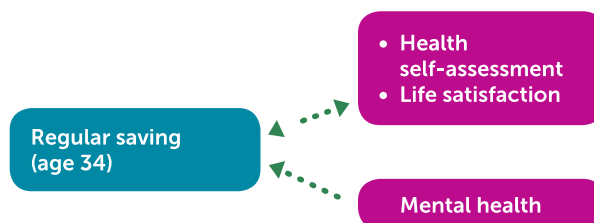
In many cases, we find that the relationship does operate in both directions. In other cases, there is stronger evidence to suggest that the relationship works in one particular direction. As we might expect, the findings show that there is an interdependency between many of the financial outcomes and other adult outcomes, in that the relationship appears to work in both directions.

²⁹ Such as Money and Mental Health Policy Institute (2016).

³⁰ The analysis has been done only for adult outcomes which are present in more than one wave of the survey. Specifically, the mental wellbeing scale is not available at age 34 and the 'distance from crime' measure is unavailable at age 42.

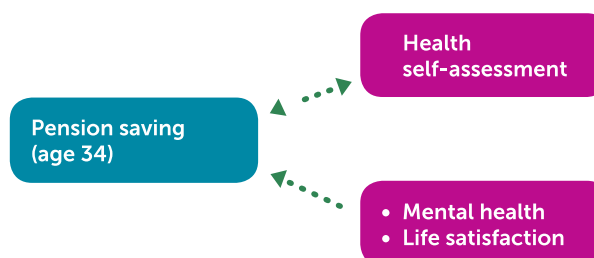
5.2.1 Regular saving and other adult outcomes

- Regular saving is positively linked to **health self-assessment** and **life satisfaction** at age 34. Further analyses using the availability of health self-assessment and life satisfaction at age 42 provide some evidence of **dual causality** between regular saving and these two adult outcomes – ie, regular saving drives health self-assessment and life satisfaction positively, and vice versa.
- Regular saving was also found to be positively related to individuals' **mental health** at age 34. The evidence suggested that the direction of travel was one way, so on average **better mental health enabled people to save regularly**.



5.2.2 Pension saving and other adult outcomes

- Pension saving is also positively linked to health self-assessment at age 34. As with regular saving, further analysis provides some evidence of dual causality between these two outcomes – ie, that **pension saving positively drives health self-assessment, and vice versa**.
- Pension saving was also found to be positively related to individuals' mental health and life satisfaction at age 34. Looking at direction, on average **better mental health or higher life satisfaction increases people's likelihood to save for a pension**.



5.2.3 Low debt-to-income ratio and other adult outcomes

- A positive link was found between low debt-to-income ratio and **health self-assessment** at age 42. This analysis provides an indication that this link is likely to exist in both directions – ie, on average, poor health self-assessment leads to indebtedness, and indebtedness leads to a poorer health self-assessment.
- Similarly, a **two-way relationship** appears to exist with **life satisfaction** as well as with the absence of a **long-standing illness**.



It should be noted, however, that the lack availability of the debt-to-income measure at age 34 means that the relationship between the outcome at age 34 and at age 42 cannot be tested. Without these results as controls we are less confident in the findings as we cannot be sure that the relationship is not due to some correlation between past levels of health self-assessment and past levels of low debt-to-income.

5.2.4 Net wealth and other adult outcomes

- A positive link was also found between individuals' net wealth and their **health self-assessment** at age 42. On average, this link exists in one direction – ie, **lower net wealth on average resulted in poorer health outcomes**.
- Similarly, the relationship with life satisfaction also appears to be one-way – ie, **lower net wealth on average resulted in poorer life satisfaction**

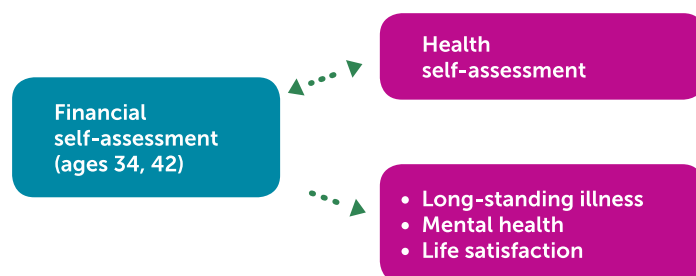


As with the 'low debt-to-income ratio' financial outcome, the lack of availability of the net wealth measure at age 34 limits the confidence associated with these findings as it does not allow for a full set of relationships to be tested.

5.2.5 Financial self-assessment and other adult outcomes

Financial self-assessment is surveyed at both age 34 and at age 42, and we find that:

- The relationship between financial self-assessment and **health self-assessment** is likely to go in **both directions**.
- Higher financial self-assessment is more likely to drive the **absence of a long-standing illness, higher life satisfaction**, as well as **better mental health**, rather than the other way around.



Overall, we find evidence that financial outcomes and other adult outcomes are strongly intertwined. This highlights the relevance of financial capability for other important aspects of adult life, such as mental and physical health and life satisfaction. These findings make the results so far – that childhood skills are important for financial outcomes in adulthood – even more compelling.

Chapter 6 – How are all of these elements connected?

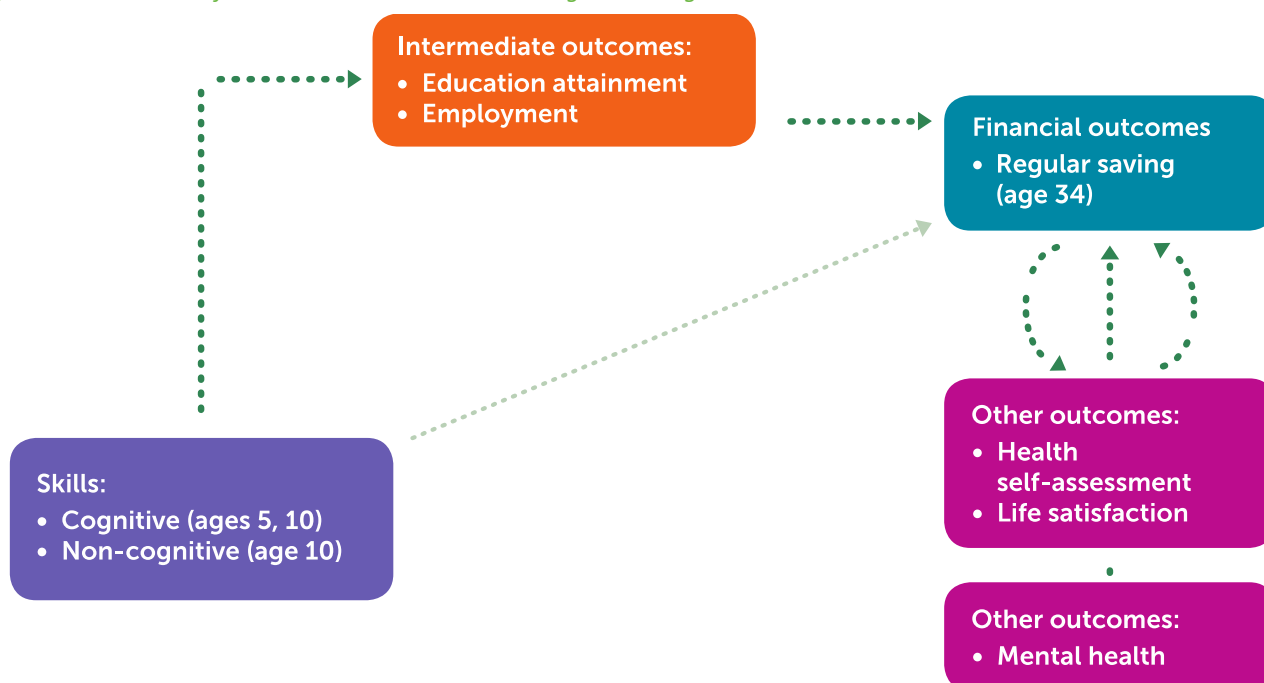
The analysis has revealed connections between multiple aspects of an individual's life between the ages of 5 and 42:

- It has shown that there are relationships between cognitive skills, non-cognitive skills, and behaviour at ages 5, 10 and 16 and financial outcomes in adulthood.
- In some cases, this relationship is channelled through intermediate outcomes while in others, the relationship appears more direct.
- The analysis has confirmed that there are links between adult financial outcomes and other aspects of adult life, such as health and life satisfaction. In some cases it appears that financial outcomes are driving the adult outcomes and vice versa.

This section pulls together some of the main results, focusing on one financial outcome at a time, in order to explore how everything is connected. For simplicity, the section has focused the discussion around a selection of intermediate outcomes (educational attainment, employment and income) and a selection of key adult life outcomes (health self-assessment, life satisfaction, mental health and long-standing illness). The full set of findings regarding these outcomes are presented in Chapter 3 and Chapter 5 respectively.

6.1 Regular saving

Figure 2: How are all of these elements connected to regular saving?



- There is a positive link between an individual's cognitive and non-cognitive skills measured at ages 5 and 10 and the likelihood of regular saving at age 34, even when controlling for their childhood personal characteristics and family background.

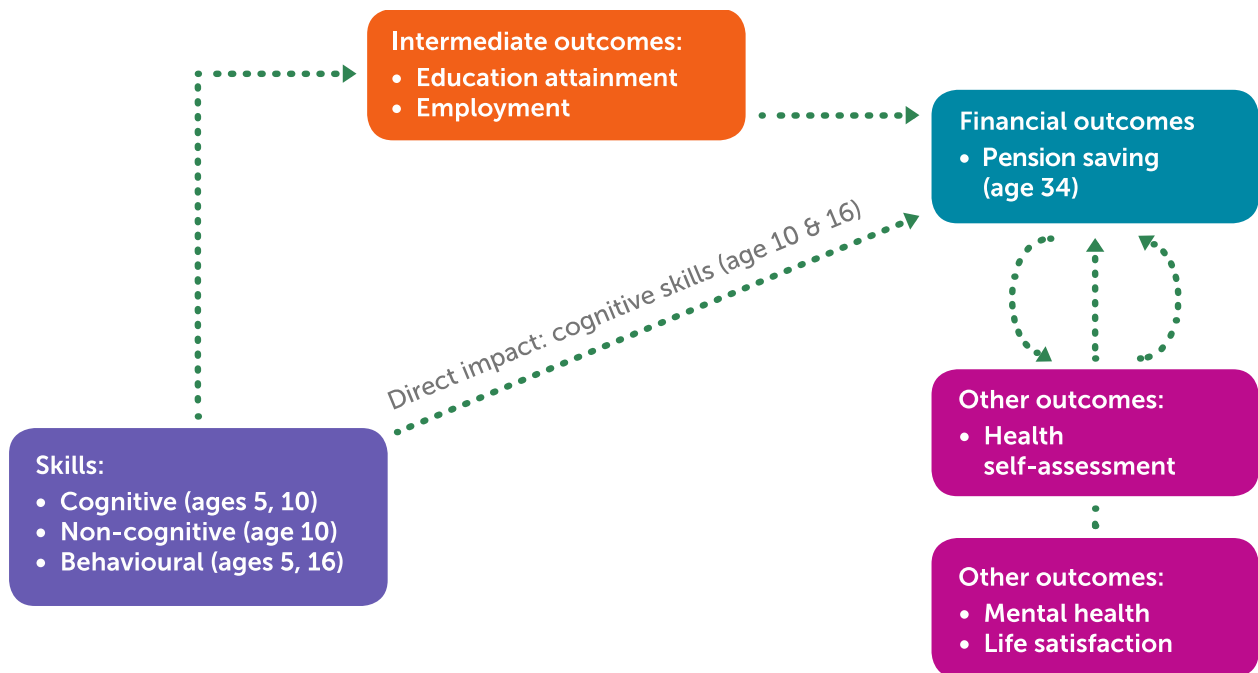
The analysis suggests that intermediate outcomes such as educational attainment and employment act as channels for all skills. For example, children with better skills are more likely to go further in education and more likely to be employed in adulthood, which in turn increases the likelihood of saving regularly.

There is evidence of an interdependency between regular saving and health self-assessment, and between regular saving and life satisfaction. These relationships appear to work in both directions. For example, a person with high life satisfaction may be in a better position to save regularly because they are already content with their lifestyle, but equally, a person who saves regularly might be able to afford a better lifestyle, which may result in higher life satisfaction.

There are also indications that adults with better mental health are more likely to be regular savers.

6.2 Pension saving

Figure 3: How are all of these elements connected to pension saving?



There is a positive link between an individual's cognitive skills, non-cognitive skills and behaviour, and the likelihood of pension saving at age 34, even when controlling for childhood personal characteristics and family background.

Considering the role of intermediate outcomes, the analysis suggests that education and employment act as channels for some skills. For example, children with better skills are more likely to go further in education and more likely to be employed in adulthood, which in turn increases the likelihood of saving for a pension.

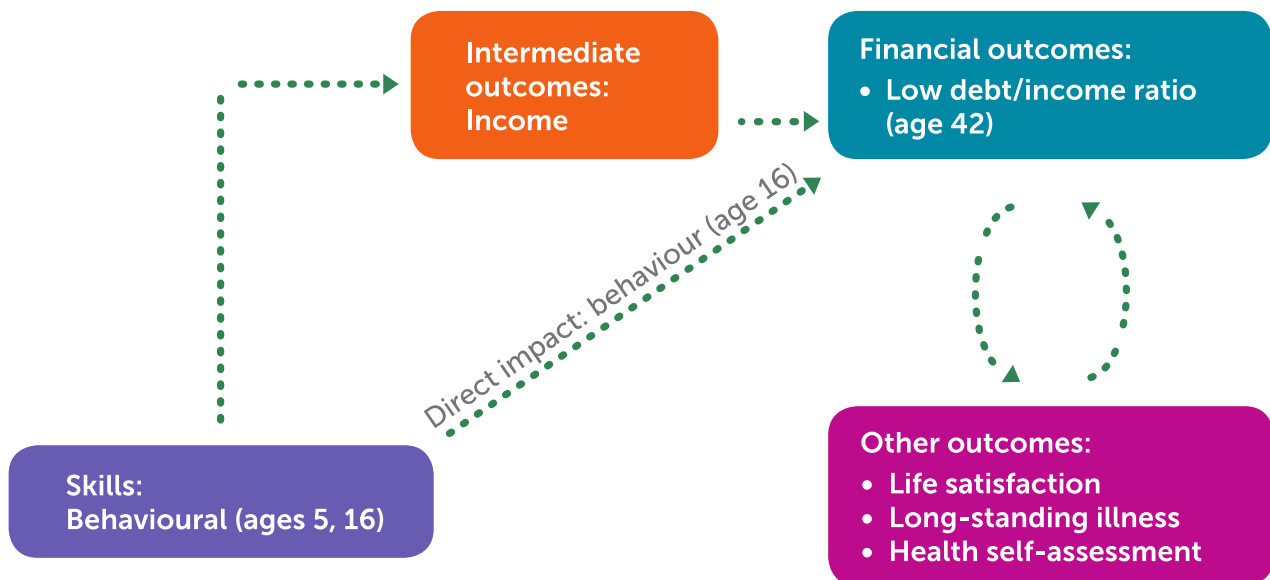
There is some evidence to suggest that the link between cognitive skills at the ages of 10 and 16, and adult pension saving is more direct, in the sense that there is a positive link even when controlling for an intermediate outcome (such as education or employment). This suggests that there is a further impact of cognitive skills over and above that which is channelled through the intermediate outcome.

There is evidence of an interdependency between pension saving and health self-assessment. The relationship appears to work in both directions. For example, a person in good health may be in a better position to save for a pension because they are able to work, but equally, a person who saves for a pension may have less anxiety about future resources, and may experience better health as a result.

There are also indications that adults with better mental health and better life satisfaction are more likely to be pension savers.

6.3 Debt-to-income ratio

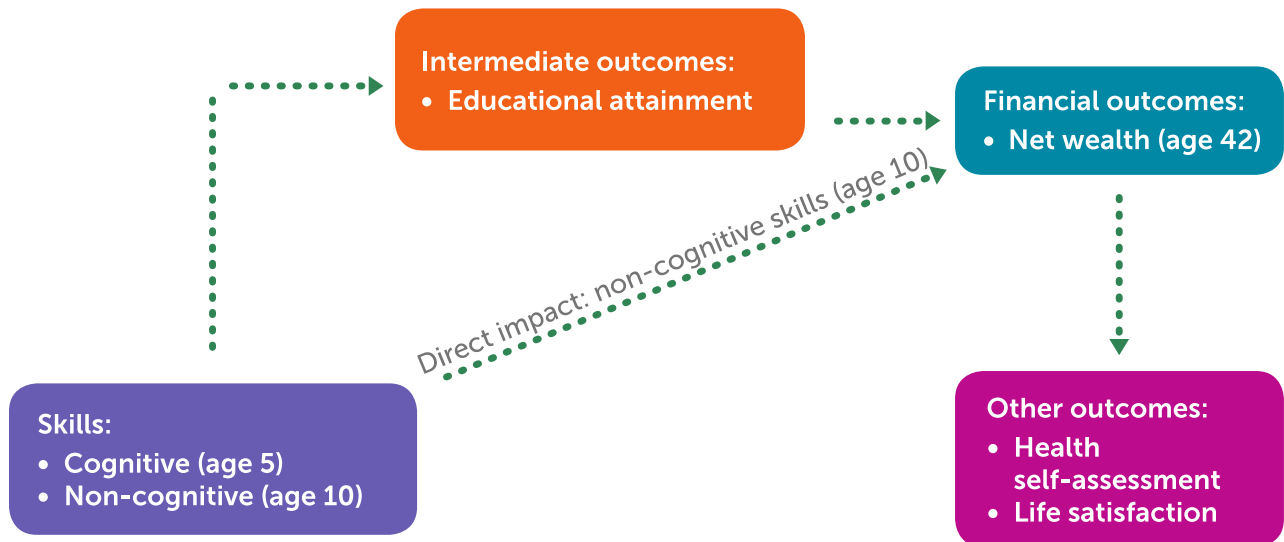
Figure 4: How are all of these elements connected to debt-to-income ratio?



- There is a positive link between an individual's behaviour at ages 5 and 16 and their debt-to-income ratio at age 42, even when controlling for childhood personal characteristics and family background.
- Income acts as a channel for this relationship, in that individuals with better behaviour at ages 5 and 16 will have on average higher earnings, which reduces the likelihood that they will have debts exceeding a quarter of their income.
- There is evidence to suggest that the link between behaviour at age 16 and the debt-to-income ratio is more direct, even when controlling for an intermediate outcome such as income. This indicates that there is a further impact of behaviour beyond the impact channelled through the intermediate outcome. Considering two individuals with the same family background and with the same income, the individual with better behaviour at age 16 will have on average a lower debt-to-income ratio.
- Examining the link between the debt-to-income ratio and other elements of adult life, there appears to be an interdependency between the debt-to-income ratio and other adult outcomes, even when controlling for personal and family background characteristics. Adults with a higher debt-to-income ratio are more likely to have a long-standing illness, less likely to positively rate their health over the previous 12 months, and on average, have lower life satisfaction.

6.4 Net wealth

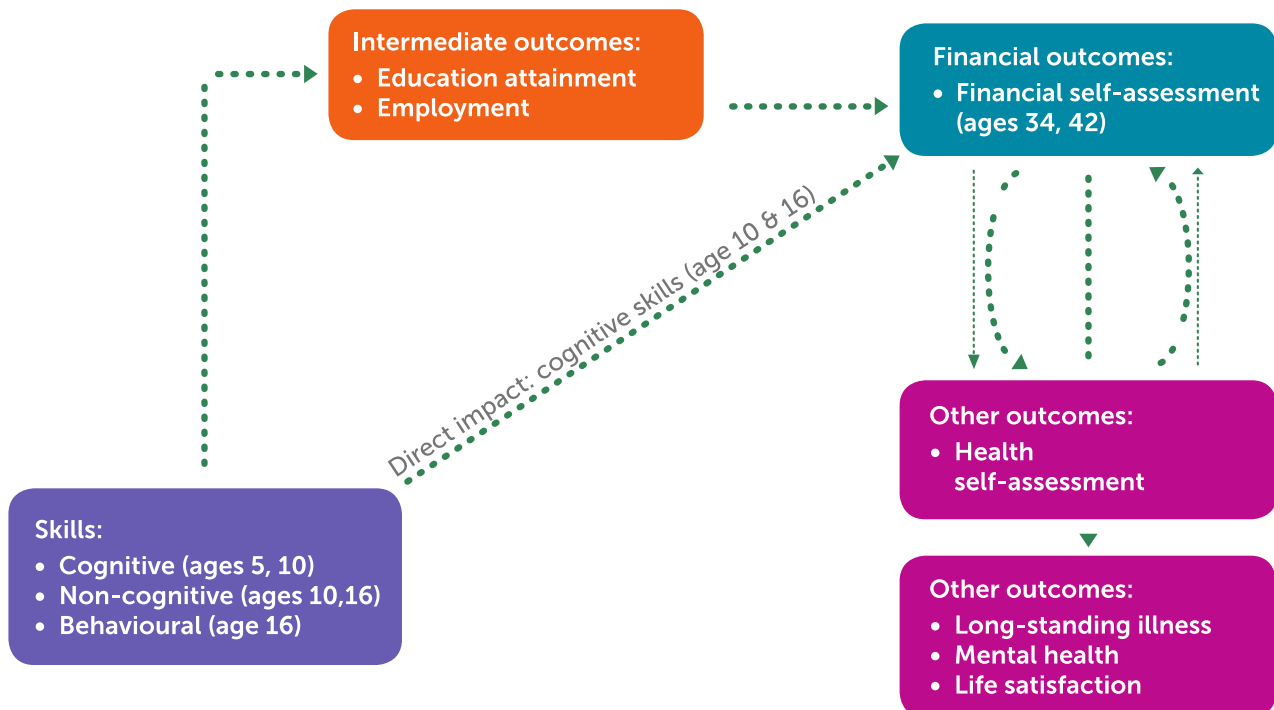
Figure 5: How are all of these elements connected to net wealth?



- The analysis has found positive links between an individual's cognitive skills at age 5 and their net wealth at age 42, and between non-cognitive skills at age 10 and net wealth at age 42, even when controlling for childhood personal characteristics and family background.
- Educational attainment acts as a channel for this relationship, in that individuals with better cognitive and non-cognitive skills will have on average higher educational attainment and relatedly, higher earnings.
- There is evidence to suggest that the link between non-cognitive skills at age 10 and net wealth is more direct, even when controlling for an intermediate outcome such as educational attainment. This indicates that there is a further impact of non-cognitive skills beyond the impact channelled through the intermediate outcome. Considering two individuals with the same family background and with the same educational attainment, the individual with better non-cognitive skills at age 10 will have on average higher net wealth at age 42.
- Examining the link between net wealth and other elements of adult life, there appears to be a relationship between net wealth and other adult outcomes, even when controlling for personal and family background characteristics. Adults with higher net wealth are more likely to positively rate their health over the previous 12 months, and have higher average life satisfaction.

6.5 Financial self-assessment

Figure 6: How are all of these elements connected to financial self-assessment?



- There is a positive link between an individual's cognitive skills, non-cognitive skills and behaviour and how they are managing with financial matters at both ages 34 and 42, even when controlling for their childhood personal characteristics and family background.
- Education and employment act as channels, in the sense that children with better skills are more likely to go further in education and more likely to be employed in adulthood, both of which are positively linked to financial self-assessment.
- There is some evidence to suggest that the link between skills (particularly those assessed at ages 10 and 16) and financial self-assessment is more direct, even when controlling for an intermediate outcome such as education or employment. This suggests that skill levels have an impact of skills over and above that which is channelled through the intermediate outcome. For example, comparing two individuals who have the same family background and have the same educational attainment, the individual with better non-cognitive skills at ages 10 and 16 is more likely to say they are managing well with their financial matters in adulthood.
- Examining the link between financial self-assessment and the other elements of adult life, there appears to be an interdependency between financial self-assessment and health self-assessment.
- There are also indications that adults who say they are managing well with financial matters are consequently less likely to have long-standing illnesses, and have a better assessment of their mental health and levels of life satisfaction. For example, comparing two adults with the same personal and family background characteristics, comparing one who is living comfortably to another struggling with financial matters, the adult with the better financial self-assessment is consequently less likely to have a long-standing illness, and will have on average better mental health and better life satisfaction.

Chapter 7 – Conclusions

These findings give us important clues to add to our understanding of what contributes to financial behaviour in adulthood. We now have greater insight of the importance of particular skills growing up, developed at particular ages. The findings compellingly show that adult financial behaviour is not simply a consequence of cognitive skills, or social background, or household income. The findings also show that there are wider benefits to improvements in financial capability, relevant to those who work on public health and wellbeing outcomes, and that financial outcomes can play an important role in solving wider public policy issues. They give good reason to support early intervention to develop the skills and protective intermediate outcomes linked to financial capability in the longer term.

There remain significant gaps in our understanding, however. The literature review carried out at the start of this project found studies focusing on the effect of childhood skills on adult financial capability or financial outcomes were scarce. The financial outcomes measures used in this study were constrained by the availability of measures within the BCS70, meaning for example that it was not possible to include an over-indebtedness measure in line with the Money Advice Service's Adult Outcomes Framework. The study also of course relates to a cohort who experienced childhood in the 1970s, who will be in some cases today's parents.

The Money Advice Service will continue to explore the questions arising from this report, aiming to understand more about the components that contribute to good financial capability and financial outcomes in life, and the reasons for the links we have found in this research. Wider evaluation of projects and programmes will help understand more about what interventions can contribute to building good financial capability effectively.

The findings from this work will be essential inputs to a detailed analysis of the financial capability needs of children and young people currently in development. This needs analysis will draw together findings from this report, and wider research such as 'deep dives' into the results of the Money Advice Service's survey of the *Financial Capability of Children, Young People and their Parents* (Money Advice Service, 2017), to inform its developing commissioning plan for children and young people, which will be published in 2018.

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All our research can be found on our website:
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November 2017

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