

The True Potential Centre for the
Public Understanding
of Finance



Research Centre
Business in Society

Coventry
University



Managing My Money for the Just About Managing

Final Report

A research project testing the effectiveness of a short, behaviourally-informed financial education tool, conducted by The Open University's True Potential Centre for the Public Understanding of Finance and Coventry University, and funded by the Money Advice Service's What Works Fund

Will Brambley, Shaheen Akter, Lindsey Appleyard, Hussan Aslam, Sara Degli Esposti, Sally Dibb, Jerome Monne, John Morris, Tam Nguyen, Michael Oliver, Helen Roby, Olga Siemers, and Tara Zaksaitė



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Biographical Notes

This report was primarily written by Will Brambley, with additional content provided by Lindsey Appleyard, Hussan Aslam, Sally Dibb, Jerome Monne, and John Morris; and editing by Michael Oliver. It is based on a programme of research conducted by two linked teams at The Open University and Coventry University, and due to the collaborative nature of the project we have chosen to name the core researchers who delivered this as co-authors.

Will Brambley was the principal investigator for the project and led the quantitative team at The Open University's True Potential Centre for the Public Understanding of Finance (PUFin): Shaheen Akter, Jerome Monne, Tam Nguyen, Olga Siemers, and Tara Zaksaitė.

Professor Sally Dibb led the qualitative team at Coventry University's Centre for Business in Society (CBiS): Lindsey Appleyard, Hussan Aslam, Sara Degli Esposti, John Morris, and Helen Roby.

Please direct all correspondence to Will Brambley at william.brambley@open.ac.uk.

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Table of Contents

1.0	Executive Summary
1.1	Contextual Summary
1.2	Project Overview
1.3	Evaluation Approach
1.4	Key Findings
1.5	Limitations
1.6	Implications
2.0	Overview of Project
2.1	Introduction
2.2	The Rationale for the Intervention
2.3	Target Audience and Segmentation
2.4	Theory of Change
2.5	The Intervention
2.6	Research Questions
3.0	Overview of the Evaluation Approach
3.1	Introduction
3.2	Quantitative Methodology
3.3	Qualitative Methodology
3.4	Holistic Analysis
4.0	Key Findings
4.1	Introduction
4.2	Impact on Budgeting and Spending
4.3	Impact on Saving and Resilience
4.4	Secondary Questions: who it worked for, what form, and engagement
5.0	Conclusion: Theory of Change, Emerging Themes & Policy Recommendations
5.1	Theory of Change and Mechanism of Action
5.2	Emerging themes
5.3	Implications for Policy and Practice
6.0	Limitations and Future Research
Appendix 1	Three Core Attributes for Designing Our Tool
Appendix 2	Additional Quantitative Methodology
Appendix 3	Additional Qualitative Methodology
Appendix 4	Comparing the Impact of Different Forms of the Intervention
Appendix 5	Analysis on Engagement

1.0 Executive Summary

1.1 Contextual Summary

UK households have a critical lack of financial resilience. A third of adults in the UK – 16 million people – are “living on the edge”, spending just within their means but with no savings or capacity to cope with an unexpected expense, yet over two-thirds of households are caught out by an unexpected bill each year.¹

This lack of resilience to common financial shocks is one of the main drivers of problem debt, an issue that causes such wide-ranging harm, from mental health to family breakdown, the Centre for Social Justice called it “the most serious social problem facing the UK”.² £1000 in savings would prevent almost half of those who fall into problem debt from doing so, but people struggle to change their habits until a trigger event forces them to.³

Financial education is often touted as a solution, though it’s rarely been shown to cause a significant impact on behaviour. Moreover, it primarily appeals to those interested in finance, not the Just About Managing (JAMs) who are most in need of improving their resilience. More positively, behavioural research suggests the potential for financial education to improve behaviour and resilience if designed differently, which this project aims to do and test whether it works.

1.2 Project Overview

This project aims to design and test whether a radically simple, practical, scalable financial education tool, delivered pro-actively through organisations that have an existing relationship with working-age adults who are Just About Managing, could reach and nudge them to live a little within their means, building resilience and preventing them from falling into future financial difficulties. The tool focuses on budgeting, drawing on findings from behavioural research to promote small changes to everyday spending decisions, that build resilience and help participants make the most of their money.

1.3 Evaluation Approach

The evaluation uses a mixed-methods impact assessment. The quantitative evaluation is structured around six controlled field trials, each with a different delivery partner organisation, testing the causal impact of the tool in multiple real-world settings to provide more confident, generalisable findings as to whether it works and who it works for. The trials use both survey data on behaviour and outcomes across budgeting, spending, and saving, and objective data on participants savings balances. The qualitative analysis uses in-depth interviews and focus groups to develop deeper insight into how and why the tool does or doesn’t work, and any wider impacts it might have. The results from both methods are combined, considering what themes emerge

¹ Money Advice Service, *16 Million Brits ‘Living on the Edge’ with Zero Savings* (2014)

² Centre for Social Justice, *The five pathways to poverty*

³ StepChange, *An Action Plan on Problem Debt* (2015)

and what implications these have for financial capability policy and practice, as well as future financial capability research.

1.4 Key Findings

Our theory of change is that the tool will cause participants to increase their use of budgeting, make better, active spending decisions, and in doing so have more money left at the end of the month and increase their resilience savings. Our results support this, finding strong evidence that the tool can improve budgeting, spending and saving behaviour for those Just About Managing. The details of specific impacts and their magnitudes are not consistent across all trials, however, and the impacts on savings seem primarily driven by those with pre-existing savings. There was little evidence of impact on broader financial variables, such as missed payments or confidence, or that specific forms of intervention were distinctly more effective than others.

Demographic data suggest the tool works for most JAMs, primarily within the Squeezed segment but also for JAMs within the Struggling or Cushioned segments, though not for those with deep-seated spending biases or those on exceedingly low incomes. It may be most impactful when delivered through in-person methods, though light touch methods appear to be almost as effective.

The findings support themes from existing behaviour change research, on the importance of targeting interventions at changing specific behaviours, being short and practical, focusing on small changes, using teachable moments, and the benefits of social elements. We also find engagement emerges as a key factor which warrants greater attention in research and design.

1.5 Implications

The core implication for policy is that low-cost, light-touch financial education can significantly improve the day-to-day financial behaviours and resilience of people who are Just About Managing. However, the effectiveness at reaching this group can vary widely, so care must be taken on the details, especially the method of engagement.

We also present implications for the design of financial education tools, most notably the need to move away from classic notions of “education” and towards the timely provision of relevant information, delivered to those who need it where they are rather than requiring them to find it.

1.6 Limitations

The main limitations related to the relatively short timescale of the project. More time would enable us to collect longer-term data, measure and analyse changes in regular savings behaviour, investigating more-nuanced results using more-complex analytical techniques, collect larger data samples, structure more trials with objective data, and be able to more closely integrate and combine the quantitative and qualitative results.

The methodology has proven valid, though responses to surveys were very difficult to generate, leaving some of our survey-based trials with less statistical power than we had hoped.

2.0 Overview of Project

2.1 Introduction

Financial difficulty, particularly when it leads to problem debt, is one of the biggest social problems in the UK. As well as its direct impact, it is linked to physical and mental health problems, family breakdown, and unemployment.⁴ It also tends to disproportionately hit those on low incomes or otherwise experiencing harm, exacerbating inequality.⁵ Many of the UK population are Just About Managing, with little liquid savings or other resilience to negative financial shocks.⁶ They also systematically underestimate the likelihood of experiencing a negative shock such as unemployment or an unexpected bill.⁷

Research has shown that a lack of resilience to common financial shocks is one of the most common reasons people fall into financial difficulties,⁸ however few people change their financial habits or behaviours to prevent this until they experience a trigger event or something forces them to do so.⁹ Financial education in particular has not previously been shown to be successful at leading participants to make the changes necessary to build this resilience.¹⁰ To put it colloquially: it is a classic case of ‘prevention is better than cure’, yet the current prevention methods are not working.

Our aim is to assess whether a financial education intervention that draws on insights from behavioural science and economics can succeed where previous initiatives have failed. Can a targeted, online, scalable intervention improve the financial behaviour and wellbeing of the people most at risk of falling into financial difficulties? Those who are at most of risk are best characterised as the Just About Managing (JAMs): working-age adults, who are not yet in significant financial difficulty, but are living close to the edge and have little resilience to any financial shocks.

Our project builds and tests a tool that differs significantly from previous forms of financial education, on a variety of JAM populations. It is short, practical, online, and focused on the behaviours it aims to change rather than improving participants general

⁴ Centre for Social Justice, *Maxed Out: Serious Personal Debt in Britain* (2013)

⁵ Ibid.

⁶ Finch, D., *Hanging On: The stresses and strains of Britain's 'just managing' families*, Resolution Foundation (2016);

Brambley, W. & Collard, S., *Saving Us From Ourselves*, True Potential Centre for the Public Understanding of Finance, (2015)

⁷ E.g. Weinstein, N. D., “Unrealistic optimism about future life events”, *Journal of Personal Social Psychology* 39 (1980); Sharot, T., Riccardi, A. M., Raio, C. M., & Phelps, E. A., “Neural mechanisms mediating optimism bias”, *Nature* 450:7166 (2007); Sandroni, A., & Squintani, F., “Overconfidence and asymmetric information: The case of insurance”, *Journal of Economic Behavior & Organization* 93 (2013); Hoch, S. “Counterfactual reasoning and accuracy in predicting personal events”, *Journal of Experimental Psychology* 11 (1984); with discussion in de Meza, D., Irlenbusch, B., & Reyniers, D., “Financial Capability: A Behavioural Economics Perspective”, *Financial Services Authority Consumer Research* 69 (2008).

⁸ StepChange, *Statistical Yearbook* (2013)

⁹ E.g. Madrian, B., & Shea, D., “The power of suggestion: Inertia in 401(k) participation and savings behaviour”, *Quarterly Journal of Economics* 66 (2001) and NEST, *NEST Members' Panel annual report 2013/2014* (2014) on inertia in savings and investment behaviour; and Competition & Markets Authority, *Retail banking market investigation: final report* (2016) on inertia in current account choice.

¹⁰ Fernandes, D., Lynch, J. G., & Netemeyer, R. G., “Financial Literacy, Financial Education, and Downstream Financial Behaviors”, *Management Science*, 60:8 (2014)

financial knowledge. In particular it aims to nudge participants to budget and make better, active spending decisions, and through doing this to build resilience to common financial shocks, save small amounts, and avoid common financial pitfalls. This report provides the main results from our initial tests.

2.2 The Rationale for the Intervention

The choice of target audience and intervention, is motivated by a number of stylised facts that have been uncovered by previous research:

- It is vastly easier for someone to prevent themselves falling into financial difficulty than it is to get out of it once problems have occurred.¹¹
- A small amount of liquid savings can have a big impact on stopping people falling into financial difficulties – StepChange estimate £1000 per household saved could prevent half of all problem debt.¹² However many UK households have little to no savings and are not taking steps to change this: 25% have negative net financial wealth, 41% are not currently saving anything, and only 20% have the recommended 3 months' household expenditure saved.¹³
- Financial education appeals to those with an interest in the subject, who are already financially capable, but most of the population and especially those less capable find finance boring or stressful. Few actively search for financial education, which means it fails to reach most people, especially those with poor financial capability, who need it the most.¹⁴
- Reaching people with little interest in personal finance usually requires proactive, interventionist methods which are too expensive to provide to the broad population of JAMs.¹⁵ Such interventions have tended to focus on fixing acute problems for people already in financial difficulty.
- Most previous financial education initiatives have been focused on improving participants' knowledge or financial literacy. These interventions have tended to have little to no impact of participants' financial behaviour.¹⁶

¹¹ Hartfree, Y., & Collard, S., *Poverty, Debt and Credit: An expert-led review* (2014); Centre for Social Justice, *Maxed Out* (2013); Citizens Advice, *Stuck in Debt: Why do people get trapped in problem debt?* (2017); The Children's Society, *The Debt Trap* (2014); and the Institute for Fiscal Studies, *Problem Debt and Low-Income Households* (2018), explore the difficulty getting out of financial difficulty. StepChange, *An Action Plan on Problem Debt* (2015) reports how small amounts of savings can prevent.

¹² StepChange, *An Action Plan on Problem Debt* (2015)

¹³ Brambley & Collard, op. cit., p. 2, reporting findings from: Rowlingson, K. & McKay, S., *Financial Inclusion: Annual Monitoring Report* (2014); Money Advice Service, *Financial Capability Strategy for the UK: The Draft Strategy* (2014); Office of National Statistics, *Wealth in Great Britain Wave 3, 2010-2012* (2014), Chapter 5: Financial Wealth.

¹⁴ Fernandes, et. al., op. cit.; Kaiser, T., & Menkhoff, L., "Does Financial Education Impact Financial Literacy and Financial Behavior, and if so, When?", *World Bank Policy Research Working Paper* 8161 (2017); Collard, S., & Brambley, W., *Online Personal Finance Learning* (2016);

¹⁵ Kaiser & Menkhoff, op. cit.

¹⁶ Fernandes, et. al., op. cit.; Kaiser & Menkhoff, op. cit.

- In contrast, behavioural research suggests it is psychology, not a lack of knowledge, that is the problem.¹⁷ Most people know the right savings habits and behaviours but struggle to follow them.¹⁸ In particular, humans tend to be present-biased, overconfident, and loss-averse, leading them to over-spend, under-save, and be resistant to changing their behaviour.¹⁹ These are the same traits that make it hard to improve our diet and exercise, a topic more widely studied that we can draw on in creating more promising interventions.²⁰

These stylised facts suggested a few principles for designing financial education initiatives that may be more successful at improving the financial habits and outcomes of the working age adults who would benefit most from doing so, which we used as a basis for designing our intervention:

- The need to reach people at risk of financial difficulty before they have problems, without them having to actively search for help.
- Accepting that most people in need of greater financial capability do not have a strong interest in finance and designing interventions to meet their needs, rather than those of current financial education users. Information needs to be short, practical, immediately relevant to their lives, and easy-to-use; focused around information they will use not the knowledge we think they should have.
- Targeting achievable changes in specific behaviours or outcomes that are causing people detriment, especially overspending, under-saving, and the lack of resilience to common financial shocks. Draw on findings from marketing and behavioural science research on what has been effective at improving people's behaviour in other areas of life where present-bias and over-confidence can cause poor habits.
- Acknowledging that funding for financial education is limited, so any feasible intervention intended for a broad population needs to be scalable at a relatively low cost.

2.3 Target Audience and Segmentation

Our target population are best characterised as people who are Just About Managing (JAMs). Although there is a danger of generalising and simplifying the range of people who are JAMs, demographic research suggests their following characteristics:

¹⁷ de Meza, et. al., op. cit.

¹⁸ E.g. Choi, J., Laibson, D., Madrian, B., & Metrick, A., "For Better or for Worse: Default Effects and 401(k) Savings Behavior." in *Perspectives on the Economics of Aging*, Wise, D. A., (2004) find two-thirds of 401(k) savers think they should save more, which matches similar findings reported in Farkus, S., & Johnson, J., *Miles to Go: A Status Report on Americans' Plans for Retirement* (1997); the 2013/14 Global Benefits Attitudes Survey; de Meza, et. al., op. cit.;

¹⁹ See de Meza, et. al., op. cit., for an extensive summary of the evidence on consumer biases and how they relate to saving, spending, and other financial behaviours.

²⁰ E.g. Hunter, R. F., Tang, J., Hutchinson, G., Chilton, S., Holmes, D., & Kee, F., "Association between time preference, present-bias and physical activity: implications for designing behavior change interventions", *BMC public health*, 18(1), (2018)

- They are likely to have little to no liquid savings and few will have actively planned for their financial future (though many may have a workplace pension).²¹
- Few have an interest in finance or commonly make active financial decisions. For example, most will have accepted whatever default pension their workplace auto-enrols them in.²²
- They tend to be more focused on the present, on making ends meet and addressing immediate financial issues and objectives, with many feeling they can't afford to save or make provisions to deal with future issues.²³
- Many have some debts, especially credit cards and overdrafts, though crucially our target audience does not include those with unmanageable, unaffordable, or otherwise problem debt.²⁴
- They tend to be slightly younger than the average UK adult population, with young families disproportionately represented.²⁵
- They cover a wide range of education, employment and income levels – wider than is often assumed – though skew towards the lower end of the income spectrum.²⁶
- People in this group may exhibit a wide range of spending behaviours, with some keeping track of their money and being savvy shoppers and others paying as little attention to their finances as they can.²⁷ Many may be careful out of necessity or having previously got into difficulty or been stung by a poor decision.

By definition, our target audience does not include those who can't manage on a day-to-day basis and who are already in financial difficulties. However, it is important to note that while many people who are unemployed, on benefits, living in social housing, or otherwise receiving help from the state or charitable organisations fall into the 'not managing' group, many others will be just about managing day-to-day. These are an important sub-section of our target audience as they are likely to be some of the people most in danger of falling into financial difficulty.

Using the Money Advice Service (MAS) Segmentation Analysis, our target audience – JAMs – closely corresponds to the 'Squeezed' segment.²⁸ However, MAS' analysis

²¹ Finch, D., op. cit.; NEST, *NEST Insight 2015: Taking the temperature of auto enrolment*, (2015); Collard, S., 2009. *Individual investment behaviour: A brief review of research*, (2009); Collard, S. & Moore, N., *Review of international pension reform*, DWP Research Report 663, (2010); Money Advice Service, *The Squeezed Segment* (2016).

²² NEST, *NEST Members' Panel annual report 2013/2014* (2014)

²³ E.g. Money Advice Service, *The Squeezed Segment* (2016); Finch, D., op. cit.

²⁴ Money Advice Service, *Market Segmentation: Segment Infographics* (2016).

²⁵ Ibid.

²⁶ Ibid.; Finch, D., op. cit.

²⁷ Money Advice Service, *The Squeezed Segment* (2016)

²⁸ Money Advice Service, *2017/18 Business Plan* (2017), p. 11

also indicated that a majority of the 'Struggling' segment are not yet in serious financial difficulties, and while they are likely to have less capacity to increase their resilience they are the group most at risk of falling into debt troubles if they experience a financial shock.²⁹ Similarly, MAS' analysis found some people within the 'Cushioned' segment were not in control of their spending habits, which had led a number of these to have borrowed heavily and put them at risk of debt problems.³⁰ These subsets of the 'Struggling' and 'Cushioned' segments could be described as JAMs, and hence form part of our target audience, though the 'Squeezed' segment form the core of this. We hope to assess whether our intervention works similarly for those at differing ends of the JAMs.

Although JAMs can be found nationwide, our research and trials were primarily undertaken in Milton Keynes and Coventry, with one nationwide trial. Milton Keynes and Coventry were chosen largely for logistical reasons, being the locations of the researchers involved. However, as areas with distinctly different populations that each have large groups of Squeezed or JAM households, they represent a good, diverse first sample to test our intervention on. In particular, Milton Keynes has a large number of young families, who are overrepresented in the Squeezed segment, and Coventry has significant ethnic diversity.

The target audience were working age adults, and there was a minor skew in targeting the intervention towards those with dependent children who are disproportionately represented in the JAM group. There is no reason to suspect the same intervention would not also be useful for pensioners, as they similarly need to budget and may experience financial shocks, although there would be some additional areas which might be included which would be relevant for them (for example pensions, social care costs, or the different benefits that are available for pensioners).

2.4 Theory of Change

The Theory of Change, depicted in Figure 1, presents the key impacts and mechanism we hypothesise our intervention may have. By providing practical tips, tools, and targeted nudges, we hope to cause participants to budget and make conscious, active decisions about their spending, leading them to avoid common financial pitfalls and save small amounts regularly. Through this we hope they will build greater resilience to common financial shocks, preventing problems before they emerge, and will make the most of the income they have.

When considering resilience it is important to differentiate between long-term savings, such as pensions, which are locked away for a future benefit, and resilience savings which can be drawn on to meet an unexpected bill or otherwise help whenever needed. While pensions and other long-term savings are very valuable in general, as our Theory of Change focuses on resilience we are primarily interested in changes to resilience savings, not whether participants alter their pension saving behaviour.

Figure 2 depicts a simplified theory of change, highlighting the main areas we hope to impact and how these link to each other and our overall aim.

²⁹ Ibid., p. 10

³⁰ Ibid., p. 11

Figure 1: Theory of Change

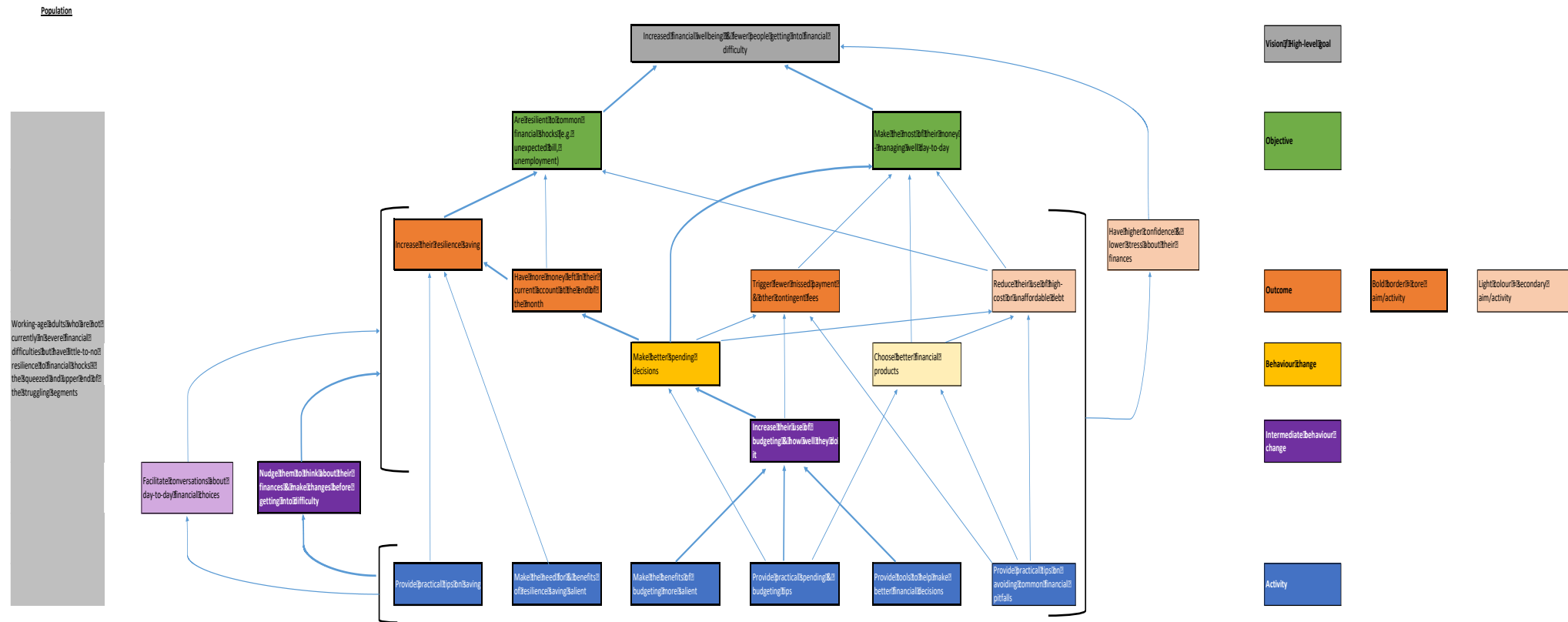
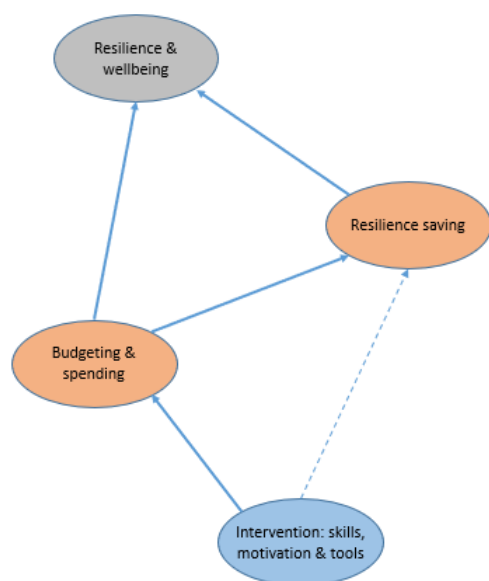


Figure 2: Simplified Theory of Change



2.5 The Intervention

The sections above discuss the rationale that prompted the aims of our intervention, our choice of target audience, and the high-level principles that guided our design. The intervention differs fundamentally from most forms of financial education that have been tested before, both in its form and content. This section summarises some of these key elements, exploring how we developed it, how it differs from more previous financial education initiatives, and why we believe this may make it more successful in improving participants' financial behaviours and outcomes. Appendix 1 discusses three of these elements in more detail.

The core intervention is an online tool called Managing My Money which is now freely available on OpenLearn Create.³¹ The tool focuses on budgeting, small saving, and avoiding common debt pitfalls, in order to improve the day-to-day money management behaviour and resilience to financial shocks of JAMs, and hence reduce the number of people falling into financial difficulty. The purpose of the tool was to increase the financial wellbeing of the population we were targeting through the prevention of problems and a broad improvement in financial outcomes, as opposed to being a tool to help those with acute problems recover from them or to improve participants' financial knowledge.

It was developed from a longer course of the same name which the Open University's True Potential Centre for the Public Understanding of Finance (PUFin) has been running since 2014. The longer course is approximately 24 hours of learning covering all areas of personal finance, has been taken by more than 300,000 people with consistently very positive reviews, and is also freely available on OpenLearn.³²

³¹ <http://www.open.edu/openlearncreate/course/view.php?id=2724>

³² <https://www.open.edu/openlearn/money-management/managing-my-money>

In adapting this longer course into an intervention that met the objectives and principles discussed above, we drew on advice from partner organisations with expertise in the financial needs and behaviours of the JAMs,³³ and on PUFin research into who the longer course reaches and how effective it is.³⁴ In particular, our findings that:

- Participants tend to have higher levels of education and be slightly older than the UK average, with 64% having a degree, 55% having previous experience of online learning, and average ages in their mid-forties.³⁵ Moreover, while the course was widely publicised when it was initially launched, all participants have had to actively find and enrol on it, demonstrating a level of interest unlikely to be shared by those who have not chosen to do this.
- There is some evidence of the course leading participants to budget more, miss fewer loan payments, and report being a little financially better off after taking it, though these effects are small, with much bigger changes in self-reported levels of stress, confusion, and knowledge about finance.³⁶

Three core attributes emerged from this process, which reinforced the principles we drew from previous behavioural research above, and hence which we incorporated into our intervention design:

- **Scope:** radically reducing the amount of content and limiting the scope of topics to focus on the key relevant areas where hope to alter behaviour – budgeting, spending, small resilience saving, and avoiding common debt pitfalls;
- **Style:** ensuring the style is practical, positive, interactive, relatable, easy to understand, and focused on actions participants feel are relevant to them, utilising nudges to promote specific changes in them, rather than on any content we believe they should know;
- **Delivery method:** proactively delivering the intervention to participants through a trusted organisation they have an existing relationship with, and in a variety of formats to suit different people.

One specific characteristic our partners recommended was to not refer to the intervention as a ‘course’ or ‘financial education’, but to call it a ‘tool’ or ‘guide’, to emphasise its practical nature, avoid negative connotations with classroom-based learning, and set appropriate expectations about the content. As such we use ‘tool’ and ‘intervention’ interchangeably throughout this paper to refer to the treatment we test.

³³ Social Publishing Project, New Central Credit Union, Coventry and District Credit Union, Swan Credit Union, and Community Action: Milton Keynes

³⁴ Collard & Brambley, *Online Personal Finance Learning* (2016)

³⁵ Ibid. For data protection reasons we have only retained age categories so cannot calculate an exact average age.

³⁶ Ibid.

Appendix 1 explores these characteristics and how we designed the tool around them in more detail.

2.6 Research Questions

Our overarching question is what impact does our targeted, behaviourally-informed, online financial education intervention have on the financial behaviour and outcomes of working-age adults who are not yet in significant financial difficulty but are living close to the edge and have little resilience to any financial shocks – the JAMs?

The secondary questions we were keen to provide insight on:

- Does our intervention help participants manage their money well day-to-day (increased budgeting, reduced contingent fees) and plan for life events/be resilient to financial shocks (increased resilience saving and having more money left at the end of the month – very much linked to managing money day-to-day)? To a lesser extent we'll also be looking into whether the courses reduce participants' use of credit, though our focus is on stopping people getting into financial difficulty and not on helping people get out of them (i.e. not MAS outcome #3).
- How much difference does the delivery method and context have on the impact a course has, especially comparing online vs. paper vs. in-person workshop formats, whether delivered in emails or given in person, and from a community figure or a company (credit union, college or fund management firm)?
- Do the courses have a differential impact on different segments of the population and sub-segments of the struggling and squeezed groups – both the sub-segments identified by MAS and how impact changes by age, circumstances and other demographic factors?
- Do the courses have any wider impact on participants' financial behaviour and outcomes?
- Why does it have an impact, not have an impact, or have a differential impact across segments, content and delivery method? Can we draw any clear insight about the mechanism or specifics that work?
- Are there any aspects of behaviour or outcomes this kind of intervention works particularly well for, or struggles to help participants with?

Our analysis of these questions to give us insight into a few broader policy-relevant questions:

- Can online (and hence low-cost, scalable) interventions have a significant impact among the squeezed and even struggling groups of working age adults, or are more intensive interventions necessary to improve financial capability, behaviour and outcomes? For what range of these segments do these interventions work?

- Is it possible to reach these hard-to-reach groups with light-touch methods such as emails and letters?
- What's the optimal way to structure and deliver interventions to have maximum positive impact (e.g. specificity vs general need, length of course, level of detail, method of delivery)? How does this differ by sub-segment?
- Are there any aspects of behaviour or outcomes this kind of intervention works particularly well for, or struggles to help participants with?

These research questions follow from and build on the stylised facts mentioned above which summarise previous research on the impact of financial education. In particular, that previous financial education has not had much success in reaching this target audience and has had little impact on participants' behaviour, but that behavioural literature from other areas suggests such impact may be possible with tools designed that are better designed to do this. We hope to challenge the current conclusion that only expensive, interventionist methods can be successful at improving financial outcomes in hard-to-reach groups, or at least to provide additional evidence that even behaviourally-informed tools such as ours struggle to achieve this.

3.0 Overview of the evaluation approach

3.1 Introduction

The central hypothesis tested in this study is whether the intervention changed the budgeting, spending and saving behaviour of the Just About Managing, and hence whether it improved their resilience to financial shocks or day-to-day financial outcomes. As detailed in the theory of change and research questions above, we are also interested in how, why, and for whom the intervention does or does not work, and any insight we can uncover on the detail of what works.

To undertake our evaluation, we used a mixed methods approach. The use of mixed methods is necessary to both evaluate the impact of our intervention and consider the mechanism and broader issues. We used a series of field trials, with quantitative data collected through surveys and objective data on savings balances, and qualitative data using in-depth interviews with small samples of participants followed by focus-groups a few months later.³⁷ All trials collected data before and after the intervention, and for quantitative trials from a sample split into a treatment and a control group.

We conducted multiple trials with different audiences for three reasons: replication, generalisability, and to help us consider who the tool appears to be effective for. While doing so is expensive and time consuming, especially when using multiple analytical methods, combining results from multiple trials gives much greater confidence that our findings are valid and representative of the population we aim to provide insights about, and hence provide a stronger basis for policy decisions.

Conducting quantitative trials and qualitative analysis separately allowed us to answer broader questions of how, why (or why not) and through what mechanism the intervention may have had an effect. Combining the results from both techniques across trials provided additional benefits: assessing if results are consistent when using different methods to give greater confidence in them, considering if additional insights can be drawn from the set of results as a whole, and reducing the limitations of each method. In particular, quantitative methods can only estimate impacts on the variables measured, which with field trials is often limited by practical questions of what data can be collected, so the ability of qualitative methods to flag if there might be major additional impacts is very valuable, even though it is not able to quantify these. Section 3.2 provides a summary of the quantitative methodology employed in this study, section 3.3 the qualitative methodology, and section 3.4 the holistic analysis to combine these. Appendices 2 and 3 provides a more detailed explanation of the methodology and the rationale behind it.

³⁷ Field trials are a form of experiment (and often called field experiments), where rather than conducting each experiment in a laboratory under controlled conditions they are conducted in the real world ('in the field'), as they would be if the intervention were to be rolled out. The quantitative trials were controlled trials, with random assignment where possible (RCTs).

3.2 Quantitative Methodology³⁸

3.2.1 Trial Design

The quantitative analysis comprised six controlled field trials conducted through the six delivery partners mentioned below, which were analysed primarily using linear regression and t-tests with additional methods (e.g. ANOVA, non-parametric regression, and Wilcoxon signed-rank test) used to check for robustness.

All six quantitative trials follow the same basic methodology:

- Collect baseline data: measure the outcome data at the individual level for all participants;
- Intervention: split participants into a treatment group and a control group, and offer the intervention to the treatment group;
- Collect after data: measure the same outcome data at least a few weeks afterwards (for both groups);
- Analyse the data: assess whether the change in data is significantly different for the treatment group compared to the control group.

Due to the nature of the intervention, recruitment method, and partner organisation, the exact form of each trial differed in four related ways:

- the format and delivery of the intervention: online (via email), paper (via letter), workshop, or in-person (via community volunteers);
- the type of trial: encouragement (treatment group receive invitation to use the tool) or structured (treatment group all actively used the tool);
- the type of control group: whether random allocation of participants was possible or whether a created control group was used;
- the data collected: objective data on savings and loans balances, or questionnaires to capture behaviours, attitudes and outcomes relating to savings, spending, budgeting, debt, and confidence.

For multi-trial studies such as this the data collected is the crucial distinction, as it defines what questions each trial is attempting to answer and whether results can be directly compared across trials. This splits our six trials into four “survey-based” trials that use questionnaires to assess self-reported changes in behaviour, outcomes, and attitudes across all topics, and three “credit union” trials that use objective data to estimate changes in resilience savings (with the Swan Credit Union trial doing both). Table 1 provides these details for each of the trials:

³⁸ A more detailed table of the 6 trials, discussion of the quantitative methods used in this study, and copies of the questionnaires used and how they were scored, can be found in Appendix 2.

Table 1: details of quantitative trials

#	Name	Intervention type	Trial & control type	Outcomes data	Sample size
1	New Central Credit Union (NCCU)	Online & paper	Encouragement RCT	Objective savings	1935: • T: 984 o On: 626 o Pa: 334 • C: 951
2	Coventry and District Credit Union (CDCU)	Paper	Encouragement RCT	Objective savings	1322: • T: 658 • C: 664
3	Swan Credit Union	Workshop	Structured trial with created control group	Objective savings	599: • T: 18 • C: 581
			Uncontrolled before & after survey ³⁹	Survey data on budgeting, spending, saving & attitudes	23
4	Coventry University College (CUC)	Online	Encouragement RCT	Survey data on budgeting, spending, saving & attitudes	34 (before & after): • T: 17 • C: 17
5	Quids In! (QI)	Online & paper	Structured trial with created control group	Survey data on budgeting, spending, saving & attitudes	121: • T: 100 • C: 21
6	Community Connectors (CC)	In person	Structured trial with created control group	Survey data on budgeting, spending & saving	121: • T: 63 • C: 58

3.2.2 Data Collection

Our theory of change (Figure 1) sets out the core behaviours, outcomes and objectives we aim to affect: participants budgeting, spending and saving behaviour and outcomes, with broader wellbeing factors such as confidence of secondary importance. Table 2 translates these into specific concepts we collect data on to measure, and which trials connect data on each concept:

³⁹ The survey was conducted to provide additional data on participants and enhance the structured trial, and to compare results to the Coventry University College population who completed the same questionnaire. As it has no control group it is used only to support or question other findings, not to provide findings on its own.

Table 2: concepts measures by each trial

Type of concept	Concept measured	Trials					
	How much & in what ways people:	NCCU	CDCU	Swan	CUC	QI	CC
Behaviour	budget or plan their spending				✘	✘	✘
	save regularly				✘	✘	✘
	run out of money before the end of the month (or conversely have money in their account at the end of the month)				✘	✘	✘
	miss regular payments or trigger fees for late payment				✘	✘	✘
	pay off their credit card (e.g. in full, minimum payments)				✘	✘	
Outcome	have resilience savings	✘	✘	✘	✘		✘
	would be able to cope with an unexpected expense (e.g. car repairs)					✘	
	have outstanding debts, especially arrears or high-cost credit				✘		✘
	feel confident or stressed about their finances				✘	✘	✘
	feel content about their financial situation				✘		
Attitude	attitude to spending				✘		
	attitude to saving				✘	✘	

Key

Spending
Saving
Feeling

Primary objective

Secondary objective

Table 2 highlights the primary distinction between the three credit union trials that analyse objective data on savings balances, and the three survey-based trials which assess self-reported changes across all topics.⁴⁰

3.2.2.1 Objective data – NCCU, CDCU & Swan trials

We use objective data wherever possible, as it maximises power and avoids the possibility of self-selection bias by providing data on the entire sample, and through providing only purely factual data removes any self-reporting biases that can occur when using self-reported survey data.⁴¹ The only downside in using objective data is

⁴⁰ The Swan Credit Union trial also included an uncontrolled survey in addition to the objective data on savings balances, but this was to complement and enhance the objective data analysis only.

⁴¹ Self-selection bias is a form of sampling bias caused by only collecting data from those who choose to provide it, a group that may differ significantly from the broader population who do not provide data. Self-reporting or response bias refers to the bias caused when survey participants give inaccurate answers, either because their perception is flawed (e.g. placebo effect makes us believe we've got better)

that we are restricted to using the data that is available, and customer-level data is rarely able to be used as it is usually commercially sensitive.

For the three credit union trials we collected anonymised data on savings balances for all members. We are not aware of any existing research that has been able to test the impact of financial education on objective savings balances in this way, and we are very thankful to the three credit unions for providing us with anonymised data on their members' savings balances to enable us to do so. By collecting baseline data from all members, randomly assigning each to either the treatment group (who receive an invitation to use our tool) and the control group (who do not), then collecting the same data at intervals afterwards, we can calculate an unbiased estimate of the causal impact our tool has on how much members save with the credit union.

One type of objective data we were not able to collect on an individual-level was engagement data. As such, while our engagement trials test the effect of participants being offered the intervention (the "intent-to-treat" effect or ITT), we are not able to robustly split this into how effective the intervention was at reaching participants and the effect it had when it did. We have some data on the number of participants who engaged with the online intervention, and include our analysis of this in section 4.4.4, though this relies on various strong assumptions. Nevertheless, as the ITT provides the most accurate measure of the likely impact if the intervention were rolled out, the lack of detailed objective engagement data does not prevent us answering our primary research questions.

3.2.2.2 Survey data – CUC, QI & CC trials

We used surveys to collect data on the topics we could not gain access to objective data for: participants' budgeting and spending behaviour, outcomes, and attitudes. We created an in-depth 'master' survey using questions that had been validated by previous research, leaning heavily on questions from the MAS Adult Outcomes Framework, to minimise bias and obtain results consistent with other financial capability studies. This was used by the Coventry University College and Swan survey trials. In the other two survey-based trials it was not feasible to use the full master survey, so we then worked with our partner organisations to adapt it to fit each trial: into a money personality quiz to fit in an issue of Quids In!, and a series of guiding questions for Community Connectors to use in discussing participants' current financial circumstances and complete anonymously on their behalf.

In all cases identical follow-up data was collected from participants 2-8 weeks after the intervention, with a control group completing the same survey at the same time.

Surveys always present potential issues of getting large enough samples sizes and whether participants who respond to surveys are representative of the population as a whole. We used a range of financial incentives, prize draws, and reminders (email and telephone where necessary), to maximise the response rate and minimise self-selection bias. This gave us as strong and representative sample as we could attain,

or they choose to respond falsely (e.g. when reporting sensitive topics such as income or number of sexual partners).

though sample sizes for some trials were still smaller than we had hoped for, and these biases remain important points to consider when interpreting our results.

All surveys and their scoring are attached in the appendix 2.3.

3.2.2.3 Demographic variables

We based the demographic variables we collected on the MAS segmentation analysis, as well as the practical considerations of what data our partners had or could collect. Table 3 below specifies what demographic variables we collected for each trial:

Table 3: demographic variables collected for each trial

Demographic variable	Trial					
	NCCU	CDCU	Swan	CUC	QI	CC
Age (or age group)	✘	✘	✘	✘	✘	✘
Gender	✘	✘	✘	✘	✘	
Housing type: socially rented, privately rented, owned with mortgage, owned outright				✘		✘
Household make-up: single or couple, living with children or not				✘		✘
Education level				✘		
Employment type				✘	✘	
Household income and source				✘		
Postcode (4 digits, e.g. MK3 7)	✘	✘	✘			

We have matched the truncated postcode data from the three credit unions with the 2011 census data to look at various levels of social make-up and deprivation and see how these interact with the impact of our tool.⁴² These are not perfect measures as we do not have full postcodes and the census data varies significantly as you move down a level of granularity.

In addition to the above we collected data on the number of people who access the online intervention, the number who registered, and the number who completed all sections and collected their digital badge. Sadly technological limitations mean these cannot be definitively allocated to any specific trial, though the timing of first visits does enable us to get an impression of the engagement rate in the NCCU trial. The survey response rate was too low in the Coventry University College trial to give a clear impression of how many of those invited utilised the intervention. It is also not possible to get an estimate of how many people in the CDCU trial, who received the paper version, used it as there is was no data available on this.

⁴² We are investigating additional data we could collect to conduct more in-depth analysis using this postcode data, for example from an organisation like Experian, though this is beyond the scope of this project.

3.3 Qualitative methodology⁴³

The qualitative analysis used in-depth, semi-structured interviews and focus groups to collect data from participants in four trials with two of our Coventry-based partners (one workshop and one online with each partner) as detailed in Table 4.

Table 4: Summary of qualitative interventions

#	Partner	Intervention type	Sample size
1	NCCU	Online	9
2		Workshop	10
3	Coventry	Online	10
4	University College	Workshop	11

The trials allowed us to draw on two different populations and as an online and in-person tool. This data was analysed using structured thematic analysis, aided by computational content analysis using Nvivo.

While this doesn't offer the quantifiable or statistical estimates of impact they are rigorous methods that enable us to delve much deeper into the causality, mechanism, and side effects or hidden impacts that the quantitative analysis is unable to do, adding a significant level of detail and nuance that is often not captured by quantitative research.⁴⁴ In this particular context, it helps illuminate the factors which underlie financial behaviour, the attitudes which shape that behaviour, and the day-to day issues which people face in managing their finances. These in-depth insights can productively be used alongside the quantitative elements of the project to help explain the impact of different interventions.

We took ethical concerns very seriously, with every stage of the research receiving full ethical approval from Coventry University. A Data Management Plan was implemented to ensure all personal data was secure and remained confidential. Informed consent was obtained both at the recruitment stage and before each interview. This process involved describing the nature of our research and how the data would be used. Each participant also received a research information sheet in which all of their rights were explained. Participants were given the right to withdraw from the research up to two weeks following the interview and informed that if they did so, their data would be permanently deleted from the research.

To thank the participants for their time, we gave them shopping vouchers. Vouchers to the value of £45 were given to workshop participants, who also received a £25 voucher at the follow up interview. The cohorts completing the 'online-only' course were each given a £20 in voucher at their pre- and post-intervention interviews.

⁴³ A more detail account on the qualitative methods used in this study can be found as Appendix 3.

⁴⁴ Berg, 2004; Kaczynski et al. 2014.

The interviews were led by professional and fully trained researchers with experience in gathering data involving sensitive issues. Pseudonyms and other measures have been used to ensure participant confidentiality.

3.4 Holistic analysis

We brought together the data and insights from all the quantitative and qualitative trials and considered them through different analytical and disciplinary lenses to generate clearer, more generalisable, and richer insights into what works and what doesn't. We term this holistic analysis, though others may think of it as a form of synthesis analysis. For example, the nature of probability means it is common in individual quantitative trials to find some effects which seem important but lack the power to show high enough levels of statistical significance, and others that show statistical significance which might be spurious. Combining this with data from other trials of the same intervention can improve the statistical power and reduce these errors, and considering these results alongside qualitative data can help us see where there is a clear mechanism that might be causing the impact and where quantitative results may be spurious or caused by another factor. This is very much a research project that aims to be far more than the sum of its analytical parts.

To achieve this we had ongoing communication throughout the project to ensure the data we collected and questions we looked at were compatible across the trials and methodologies. While the qualitative side was led by the team at Coventry and the quantitative side at the Open University we made sure that members of each team got involved in the other area. This on-going discussion culminated in a day-long workshop held on 14 May 2018 which went over each key result in depth from both the quantitative and qualitative analysis and debated what these implied when considered together.

4.0 Key Findings

4.1 Introduction

The core aims of the outcomes evaluation are to assess the extent to which the study has achieved the intended outcomes mapped out in the Theory of Change (Section 2.4). In summary, the evaluation sought to determine whether our short, targeted, scalable financial education intervention, that draws on behavioural economics techniques, can improve the day-to-day financial behaviour and resilience of people who are just about managing – in particular their budgeting, spending, and saving behaviour and outcomes. Our conclusion is that it can but this needs to be qualified: we find strong evidence of an impact that matches our Theory of Change, but the details of specific impacts and their magnitude is not consistent across all our trials.

Our core research question was: what impact does our intervention have on the day-to-day financial behaviour and outcomes of people who are just about managing, and in particular does it lead them to make better spending and budgeting decisions, and to increase their resilience savings?

Our secondary research questions considered whether the impacts differ significantly by the demographics of the participants or the format of the intervention or the delivery method; any wider effects it has; and any insight we can draw about the mechanism behind our results. To put it colloquially, the primary question we aim to answer first focuses on the ‘what’ of the impact, while the secondary questions aim to answer the ‘to whom’ ‘why’ and ‘how’.

We have found wide-ranging and consistent results across trials and methodologies that show our tool does have an impact on budgeting, spending, and savings behaviour, and that this does occur for those who are JAMs. However, this statement belies the nuances and differences in the impact on different outcome variables, on the groups of participants it seems to work or not work for, how big its impact was, and the critical importance of engagement and delivery method. We found no consistent impact of the tool on reported levels of confidence or stress.

Our Theory of Change specifies the behaviours and intermediate outcomes we hypothesise the intervention will cause to lead to this, the core of which were summarised in Figures 1 and 2.

The intervention primarily focuses on budgeting and taking control of spending, and Section 4.2 assesses the impact it had on these. While our core interest is in participants’ behaviours and outcomes, these can take time to change, so we also have some interest in whether participants’ attitudes towards budgeting and spending has changed. This section draws from the Coventry University College, *Quids In!*, Community Connectors, and qualitative trials, as well as the Swan survey in a supporting role only.

Section 4.3 assesses the impact of the intervention on resilience saving. Our hypothesised Theory of Change is that through better budgeting and spending habits, and to some extent through the direct nudges in the intervention, participants will increase their resilience saving. This may just be having more money left in their

current account each month, especially at first, or it may be in a savings account. Section 4.3 primarily uses results from the three quantitative credit union trials (NCCU, CDCU, and Swan) and the qualitative analyses, though we also cover any significant results on savings from the other trials.

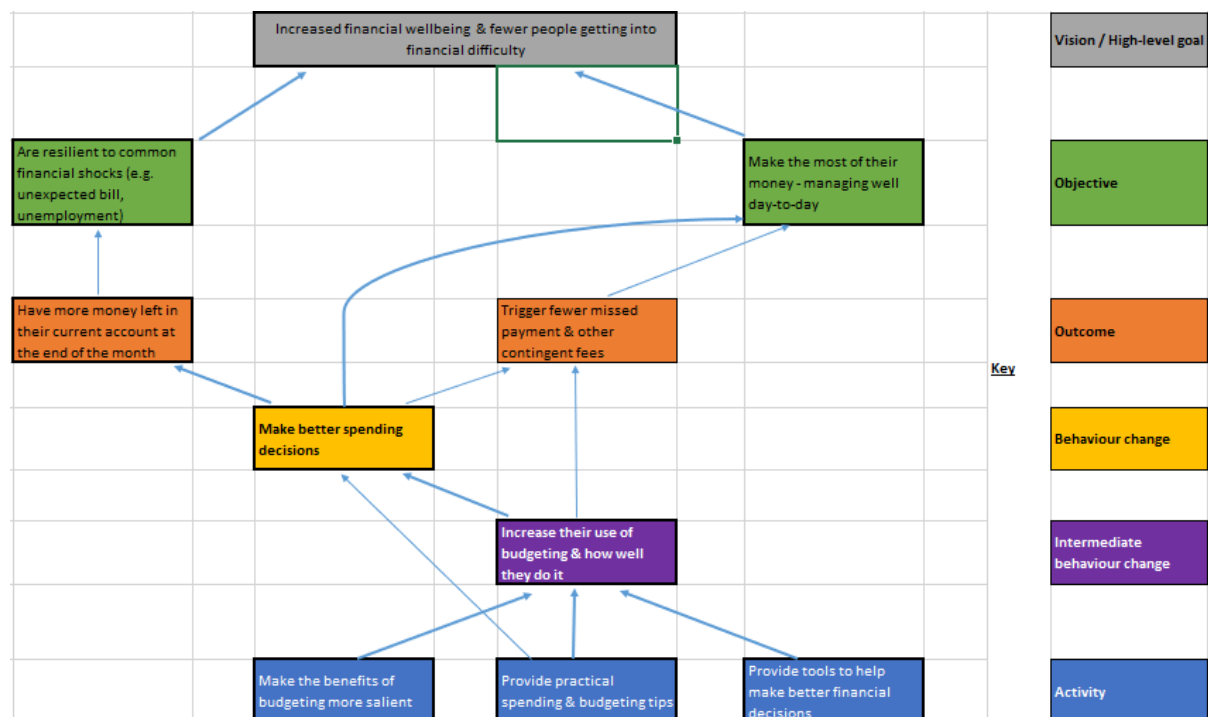
Section 4.4 analyses who the impacts occurred to, reporting the demographics and characteristics of participants to check whether our participants are broadly those who are JAMs, and assessing whether the intervention worked better for some groups than others. Taken together these three sections answer our primary research question.

4.2 Impact on budgeting and spending

Our first research question is whether the intervention increased participants use of budgeting or altered their spending habits. As a broad conclusion, our results suggest the intervention improved both. Primarily, it improved the use of budgeting with knock-on effects on spending outcomes such as running out of money or paying bills on time, but there was no significant evidence of changes in the incidence of missed payments, contingent charges, or credit card repayment. Participants interviewed for the qualitative analysis draw specific links from the intervention, especially the budgeting tool, to changes in their spending, which combined with the controlled trials support this being a causal impact.

Figure 3 expands on the Theory of Change presented in Figure 1, giving more detail on the behaviours and outcomes we are interested in and our hypothesis for how they link together.

Figure 3: Spending Theory of Change



4.2.1 Quantitative analysis

Our variables were chosen to grant insight into these behaviours and outcomes. Most follow directly from the Theory of Change, with the notable exception that we could not collect quantitative data on participants' spending decisions directly. To give us insight into their spending behaviour we use data on whether they run out or have more money left in their current account each month, whether they trigger contingent fees, and their attitude towards saving, as well as results from the qualitative research. Table 5 lists the variables we have data on from each trial.

Table 5: Spending variables considered in each trial

Topic	Trials				
	CUC	QI	CC	Swan Survey	Qualitative
How much & in what ways people:					
budget or plan their spending	✘	✘	✘	✘	✘
run out of money before the end of the month (or conversely have money in their account at the end of the month)	✘	✘	✘	✘	✘
miss regular payments or trigger fees for late payment	✘	✘	✘	✘	✘
pay off their credit card (e.g. in full, minimum payments)	✘	✘		✘	
attitude to spending	✘	✘		✘	✘

Table 6 below summarises the results of each of the four quantitative trials. It suggests the intervention improved participants' budgeting habits, which started to have an effect on whether they had money left in their current accounts at the end of a month, though this does not seem to have translated into a significant reduction in missed payment fees or credit card repayment habits.

Table 6: Summary of spending results from quantitative trials:

Topic	Trials			
	CUC	QI	CC	Swan Survey
How much & in what ways people:				
budget or plan their spending	↑	↔	↑	↑
run out of money before the end of the month (or conversely have money in their account at the end of the month)	↔	↔	↑	↑
miss regular payments or trigger fees for late payment	↔	↔	↔	↔
pay off their credit card (e.g. in full, minimum payments)	↔	↔		↔
any change in budgeting or spending behaviour	↑	↔	↑	↑
attitude to spending	↔	↔		↔

It is important to note that sample size was a major issue for these trials. As survey-based trials we needed participants to volunteer to take part and submit two surveys in order to use their data, which proved difficult despite offering rewards of shopping vouchers and conducting intensive follow-up exercises to get after data. For example we invited over 1000 Coventry University College students and over 100,000 *Quids In!* readers to participate in order to get the 34 and 121 respondents respectively as detailed in Table 1.

While the datasets we collected are large enough to analyse, and we believe have captured the most important impacts the intervention had, our results suggest there are many areas where the intervention did have an impact but where it was not large enough to be statistically significant with the samples sizes and variance in responses we received. This is particularly the case with the Coventry University College and Swan datasets which show positive treatment effects large enough to be of interest across many variables, though as most are not robustly significant we cannot be sure of these impacts.

4.2.1.1 Community Connectors

The Community Connectors trial gave the clearest evidence of impact on budgeting and spending (Table 7).

Table 7: Community Connectors trial spending results

Label	Survey question	Before	After	Δ Control	Treatment effect	Cohen's d
RunOut	Do you usually run out of money by the end of the month?	46.0%	27.4%	-0.010	0.177* (0.051)	0.4
MissPay	Have you missed any payments or bills recently, or been charged any late payment fees?	23.8%	11.1%	-0.094	0.034 (0.668)	
Budget	Do you have a budget or a spending plan?	44.4%	71.0%	-0.023	0.281*** (0.003)	0.61

These are binary variables relating to specific yes/no questions. As such the treatment effects represent the net proportion of participants whose answer changed in the month after receiving the intervention compared to the matched control group. The results are striking: a 60% increase in participants budgeting and a 40% reduction in the number who run out of money by the end of the month, compared to negligible changes for the control group. Being self-reported answers there is a possibility that these could be biased, though the method of conducting the survey was designed to minimise this: as part of a discussion with the community connector about their

financial circumstances and habits primarily used to help the connector provide the most appropriate support.

As the spending and budgeting behaviours are closely related, we also combined the three questions into two composite spending behaviour variables to assess:

- whether each participant made a positive change to any of the three spending behaviours; and
- the net improvement each participant made across the three spending behaviours (e.g. if they started budgeting and stopped missing payments, but started spending all their money in the month, they would score 1 [2 positive changes, 1 negative change]).

As with the individual terms we compared the average change made by those receiving the intervention to the average change among the matched control group, giving the following results (Table 8).

Table 8: Spending variables and treatment effects for Community Connectors trial

Label	Variable definition	Δ Treatment	Δ Control	Treatment effect	Cohen's d
SpendBeh	Any improvement in at least one spending behaviour variable: RunOut, MissPay or Budget	0.476	0.227	0.249*** (0.007)	0.54
SpendBeh#	Net improvement across the three spending behaviour variables	0.556	0.068	0.487*** (0.001)	0.62

Table 8 presents further evidence that the intervention had an impact on the spending behaviour: 47.6% of participants improved at least one spending behaviour compared to 22.7% of the control group, and an even starker difference when counting the net improvements across the behaviours.

These findings are robust to using the full control group or reducing it by matching the treatment and control groups on their before variables. It also does not change if using logistic regression. Some non-parametric methods give slightly different results, though we have not found any that reduce the significance of RunOut below 90% or the other significant variables below 95%. We also conducted the same analysis constraining the sample to only those who could make a positive change (in both groups), which removes our ability to consider the effect of the intervention in stopping people making negative changes but further helps to ensure we are comparing similar groups. This did not make any significant change to the treatment effect, though by reducing the sample size it did reduce the level of significance for all variables.

4.2.1.2 Coventry University College (CUC)

The CUC trial found somewhat significant impacts on participants paying all their bills on time (effect size: 0.87 on a 5-point Likert scale, p: 0.047) and sticking to a budget or spending plan (effect size: 0.65, p: 0.067), though found no significant impact on participants missing payments on a loan, paying late payment fees, having money leftover at the end of the month, or making more than minimum repayments on their credit card. It also made no discernible difference to participants attitude to spending or how easy they felt budgeting was. This is likely in large part because of the low sample size, so we should not read too much either way into an absence of significance.

These results tentatively support the Community Connectors trial results, finding significant impacts on some of the core budgeting and spending variables (which are the focus of the intervention) and none on peripheral variables the intervention pays less attention to. It is still possible the positive results could be spurious regressions, as with a relatively large survey we would expect some effects to show as significant by chance, though the corroborating results elsewhere and clear link between the intervention and the variables that have shown as significant give us some confidence this isn't the case.

4.2.1.3 Swan Survey

Comparing the before and after surveys for the Swan trial also finds at least somewhat significant effects in many areas, most notably:

- reducing participants reported difficulty trying to budget (0.68 effect on Likert scale, p: 0.021),
- improving their budgeting intentions (0.38, p: 0.057),
- increasing their financial knowledge (0.82, p: 0.003),
- increasing their financial wellbeing (0.59, p: 0.000),
- being more likely to only spend within their means (0.64, p: 0.007), and
- being more likely to have money left at the end of the month (0.36 effect on a binary variable, p: 0.002).

This is an uncontrolled trial so we cannot read too much into these results, but their consistency with our results from other trials – finding impacts relating to budgeting and spending control but not many variables of secondary importance – adds some support for the results from those other trials.

4.2.1.4 Quids In!

The *Quids In!* trial found no consistently significant impact on spending and budgeting behaviours.

4.2.2 Qualitative analysis

The qualitative analysis supports the suggestion that our intervention improved participants budgeting and spending behaviour. As the result of in-depth interviews it

goes into considerably more depth on the detail of changes specific participants made and how this links, or doesn't, to the intervention.

Participants across all four qualitative cohorts (online and workshop, with NCCU customers and Coventry University College students) reported starting to budget using the budgeting tool provided by the course. This was the most common impact of the course mentioned by participants. A significant change that occurred amongst participants was a shift in the way they view expenditures and saving, with participants from all groups mentioning how they appreciated the course message that they should spend on the things that they enjoy the most and make savings in other areas. Participants reported the budgeting tool enabled them to make 'small changes' and find small savings on their normal expenditures, which was then often put aside for resilience in their current account or placed in a savings account.

Box 1

Participants' quotes on using budgeting after the course to keep track of their finances and make active choices

'I've written down a budget. I think we were given a budget paper on that day and afterwards I went away and actually did a budget for myself and I was even quite surprised just at the extra spending that I was doing that I didn't really need or just there were certain things that I was spending which I just probably weren't necessary... That was the first time that I'd ever done something like that, so it was a real eye opener, definitely.'

(ASHLEY)

'After the course, I realised that if you want to be, if you really want something, you have to make [an active choice to do it], and that kind of reiterated the fact that if you don't budget and you are on a limited expenditure, this is the trap you will fall in.'

(JUDITH)

'When I had my first interview I said I am not good with money, I don't know how to manage money, but since the workshop it's kind of taught me I need to kind of like budget myself, do things that are important, don't just overspend for no reason.'

(LANA)

For many participants the biggest impact of the course was that it acted as a reminder for them of the importance of keeping track of their finances, of budgeting and controlling spending, and generally of being proactive in their day-to-day money management.

Other participants went further, drawing an explicit causal links from changes they have made in budgeting after the intervention to changes in other financial habits, such as spending and saving. This supports our hypothesis and Theory of Change of the intervention improving saving and resilience through budgeting. The third quote on the box above starts to draw the link to spending, while the quotes below highlight participants who've gone further along that process, suggesting budgeting has a progressive impact on other financial habits that develops over time.

Box 2

Participants' quotes on the impact changes in their budgeting has had on other financial habits and behaviours

'I do feel quite in control of my finances. I'm able to decide what I'm spending my money on and I'm kind of able to decide if something is like worth spending money on or not.'

(ASHLEY)

'Now I know what I can do whereas before, I'd just spend it and then get to a point where I couldn't afford stuff.'

(SHANE)

'I definitely found it a lot more helpful and I was kind of able to just assess my spending and I think my saving has become a lot better as a result of it.'

(ASHLEY)

'When I first came, I was thinking I was in control, I knew what I was doing and all that stuff. But after that, I had to take the steps she took to add up my expense and my income and I found that I was spending more than coming in. So, I thought, how can I cut this down and I decided that all the unnecessary expenditures as well, I'm thinking more about saving.'

(BRIE)

'[Budgeting] doesn't always going to mean I'm going to have more money in my pocket but I do feel more in control off what's going on with my money. So today was my pay day, I was freaking out last night because I was going through my budget and then I was going hang on a minute this is a good start, I am actually going through a budget and going these are my bills, this is what I've got coming in, this is the excess and then how much of that can I put away. So the first thing I did, I paid all my bills on line as I do and then what was left in my bank account I put a portion of that into my savings account. And it will sit there for the nice things'

(LEWIS)

The qualitative results cannot conclusively tell us that the intervention had a significant impact, and issues such as self-reporting biases and ex-post rationalisation – where participants ascribe a logical reason to their actions after the fact which were not the primary drivers at the time – are important considerations. However, it is notable how specific and detailed many of the responses are on the changes made, that common themes emerge across participants, and that these relate to the core behaviours the intervention as targeted at with much fewer and less strong statements made about changes to other financial behaviours or variables. Moreover, these results mirror those of our quantitative trials, which combined with these points give us greater confidence that our intervention had a causal impact on budgeting and spending behaviours.

4.2.3 Interpretation

Our results are consistent with our Theory of Change: that the intervention improves participants use of budgeting, and through this make better spending decisions, leading participants to be less likely to run out of money before the end of the month. The effect becomes less clear going down the chain of behaviours and outcomes, with budgeting being the strongest impact, spending outcomes such as not running out of money being next, but with no consistent evidence of an effect on missed payments, contingent charges, or improving credit card repayment behaviour. This could be a function of the research, as each stage adds more noise to an effect making it harder to distinguish the causal impact, though the lower treatment effect as well as greater variance suggest the impact is lesser on these knock-on effects.

The intervention was focused on budgeting, and making better, active spending choices through budgeting. Our results suggest this focus was successful, with charges, missed payments and credit cards having being less emphasised in the intervention. This highlights the importance of targeting the behaviours you wish to change, supporting previous research on behaviour change interventions.⁴⁵

The qualitative results also suggest the intervention improved spending behaviour beyond the variables collected in the quantitative trials, helping participants to make the most of their money more generally. We hope to look at the impact interventions such as this can have on other spending behaviours in future research.

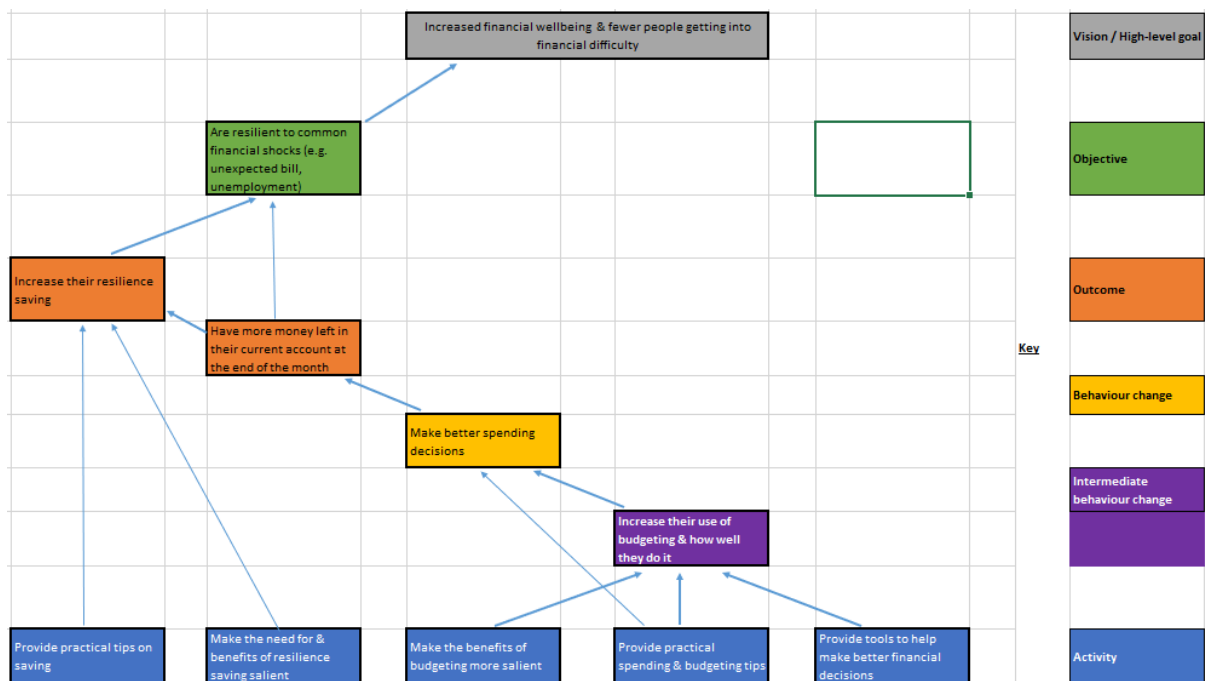
4.3 Impact on saving and resilience

The second core part of our Theory of Change is whether the intervention increased participants' resilience saving, or otherwise improve their ability to cope with a financial shock. We found clear, robust evidence that it did in most trials, though this was not universal. Curiously we do not get similarly strong results that the intervention changed regular savings behaviour or attitudes to savings, though these were only analysed in the smaller sample, survey-based trials. The form of intervention and mechanism of delivery appear important factors, which we discuss below and expand on in our thematic section.

As indicated in our simple Theory of Change (Figure 1) and a more detailed figure below (Figure 4) we hypothesise that there may be a direct effect of the intervention nudging participants to save, but expect the main impact to occur as a result of participants increased use of budgeting and subsequent changes to their spending behaviour discussed in the previous section. This distinction does not matter for our primary research question, but insights we can draw on it, especially from the qualitative work, could help inform the focus of future financial capability interventions.

⁴⁵ Kaiser & Menkhoff, op. cit.; Miller, M., Reichelstein, J., Salas, C., & Zia, B., "Can you help someone become financially capable? A meta-analysis of the literature", *World Bank Research Observer* 30:2 (2015)

Figure 4: Saving and Resilience Theory of Change



As discussed above our variables link directly from this Theory of Change, with the exception that we could not collect quantitative data on participants’ spending decisions directly. Table 9 lists the variables we have data on from each trial.

Table 9: Resilience variables considered in each trial

Topic	Trials						
	NCCU	CDCU	Swan	CUC	QI	CC	Qualitative
How much & in what ways people: save regularly				✘	✘	✘	✘
have resilience savings	✘	✘	✘	✘		✘	✘
would be able to cope with an unexpected expense (e.g. a car breakdown)					✘		✘
have outstanding debts, especially arrears or high-cost credit				✘		✘	✘
attitude to saving				✘	✘		✘

4.3.1 Quantitative analysis

Six quantitative trials looked at the impact of our intervention on savings, though our primary focus is on the two large sample RCTs with objective data – the NCCU and CDCU trials – since they offer the most robust results. Table 10 below summarises the results of all six trials, and below we run through each in more detail. Green arrows represent robust, statistically significant improvements, blue side arrows indicate no significant change, and both together indicate a potential impact but which is not robust to all valid forms of analysis.

Table 10: Summary of resilience results from quantitative trials

Topic	Trials					
	NCCU	CDCU	Swan	CUC	QI	CC
How much & in what ways people:						
save regularly				↔	↔	↔
have resilience savings	↑	↔	↑	↑		↔
would be able to cope with an unexpected expense (e.g. a car breakdown)					↑	
have outstanding debts, especially arrears or high-cost credit				↔		↔
attitude to saving				↔	↔	

As for budgeting it is important to note the limitations of the survey-based trials (CUC, QI and CC), both in terms of self-reported data and sample size.

4.3.1.1 New Central Credit Union (NCCU)

The NCCU trial provides the most robust results of the effect of our intervention on savings, being a large sample RCT using objective data. It was a trial of both ‘light touch’ delivery methods, with ~2/3 of the treatment group being sent an email with a link to the online version and the other ~1/3 a letter with a paper copy of the intervention. As the intervention is otherwise identical we first combine the data and analyse the impact of receiving any treatment, focusing on the question of whether the intervention had an impact overall. Later we split the results between the formats to discuss whether the format makes a difference to this impact. Our dependent variable is the change in savings balances with the credit union, so the treatment effect can be read as an average increase in savings for participants being offered the intervention. Table 11 below summarises the combined results:

Table 11: Linear regression of ‘light touch’ treatment on the change in savings balance of NCCU members over time, with extreme outliers removed (those who made changes >£2000)

Treatment effect on NCCU savings balance over time (£)			
Months since treatment	1	2.5	4
Treatment	21.73** (0.017)	25.12** (0.017)	33.64*** (0.005)
Constant ⁴⁶	-10.13 (0.173)	-19.66** (0.021)	-17.70* (0.055)
Observations	1899	1889	1892
R-squared	0.00	0.00	0.00

p-values in parentheses *= $p < 0.10$ **= $p < 0.05$ ***= $p < 0.01$

This suggests being invited to use the tool increases average savings by £21.73 after one month (95% CI: 3.9-39.6, p : 0.017, Cohen’s d : 0.11), increasing over time to £33.64 after four months (CI: 11.7-58.2, p : 0.005, Cohen’s d : 0.14). It’s important to note this is an Intent-to-Treat effect. As many offered the intervention will not have engaged with it, so it is unlikely to have had much of an effect on them, the impact on those who did engage with it is likely to be higher than £21.73.

The increasing treatment effect over time could be indicative of a persistent change in savings behaviour as well as a one-off increase in savings balance. We are doing further work with an extended dataset to analyse this, which we hope to report on in more depth.

We conducted the same analysis using gender, age, and initial savings balance as control variables and analysed interactions of these terms with the treatment. None of these had consistent effects, though the added noise and reduced power did affect the treatment coefficient in both directions. This is unsurprising given the stratification on these variables in the initial allocation of members to the treatment and control group.

One factor that significantly affected our results is the treatment of outliers. For all credit union trials we report results excluding outliers above £2000 (including Table 11 above), as this cuts very few people, and hence maximises power and minimises any a posteriori bias we might introduce, while preventing our results being highly dependent on a handful of people making extremely large changes.⁴⁷

As an additional form of analysis we transformed changes to savings into three binary variables denoting whether a member had increased their savings, decreased, or

⁴⁶ The negative constant indicates that the control group cut their savings, on average, during the period. This may be as the time period starts in November, when spending and withdrawing short-term savings may increase due to Christmas spending.

⁴⁷ We have tested various ways of controlling for outliers. In large part the choice depends on what we care about and how much weight we want to give to a smaller number of participants making large changes. Our core result – that the intervention significantly increased savings balances – is robust to all measures of controlling for outliers we tried (including not controlling for them at all). However, the magnitude of the impact and the differential impacts by format of intervention or the demographics of the audience do change significantly when controlling for outliers in different ways.

made any change. By removing all data on the magnitude of any change this removed all concerns regarding outliers, as well as breaking down the type of changes made. This analysis showed the light touch invitations reduced the proportion of members who cut their savings from 17.7% to 13.3% (-4.3%; CI: -1.1%, -7.6%; p: 0.009; Cohen's d: 0.12) but had no significant impact on the proportion who increased theirs (33.8% to 35.1%).⁴⁸ For an encouragement trial the relatively small figures are not surprising, though it's interesting that the effect on savings balances appears to be primarily driven by nudging people not to cut their savings rather than by encouraging people to increase them. This might be explained by the role of the Christmas period, which fell in between the first and second data collection. Alternatively, it could be because the nature of the tool and use of budgeting over creates an immediate nudge to not remove savings from a savings account, but takes more time to translate into additional deposits than the relatively short period analysed.

4.3.1.2 Coventry & District Credit Union (CDCU)

Results from the CDCU results are much less consistent, varying more with form of analysis, outliers, and control variables used. In many ways this trial was identical to the NCCU trial, though it was conducted solely using the paper version of the trial, delivered alongside members' annual statement from the credit union.

Our primary analysis shows no significant impact of the intervention on savings balances, as detailed by Table 12 below.

Table 12: Treatment effect on CDCU savings balance (£)

Months since treatment	1.5	7
Treatment	4.525 (0.454)	9.384 (0.471)
Constant	5.159 (0.230)	5.165 (0.609)
Observations	1313	1309
R-squared	0.00	0.00

p-values in parentheses *= $p < 0.10$ **= $p < 0.05$
 ***= $p < 0.01$

The difference between the CDCU and NCCU results could be caused by many factors, such as differing engagement rates, a different audience, the inclusion of the intervention alongside annual statements rather than as a standalone, differences between paper and online effectiveness, or random chance. We discuss the differences between paper and online in more detail below, which does not suggest this is the primary cause of differences between the CDCU and NCCU results, and our demographic data, though relatively limited, does not suggest the two audiences are markedly different. The difference in constant – ~+£5 here vs. -£10-20 for NCCU – coupled with the finding that the NCCU impact primarily came from participants not

⁴⁸ We retain the use of OLS regression and t-tests to analyse this data despite it violating the normality assumptions. For robustness we have conducted this analysis using logit regression and found similar statistically significant effects. Appendix 2 discusses the validity of OLS in more detail.

cutting their savings in the run up to Christmas, may suggest a significant part of the impact comes from the effect on spending and the need to call on savings rather than a motivation to increase savings itself.

It is important note that the treatment effects in the CDCU trial are consistently positive, albeit too small to be significant, and so while they do not provide robust evidence of the intervention having an impact they also do not strongly dispute other evidence that does.

4.3.1.3 Swan

The Swan trial similarly assessed the impact of the intervention on objective savings balances, this time in the form of an in-person workshop that ran through the intervention, with participants being given access to the online and paper versions during this. For practical reasons this mean we had to use a much smaller sample and could not randomly allocate participants to receive the treatment (they had to be invited and choose to attend).

Table 13 below appears to show the treatment effects on savings is much larger than in the 'light touch' trials, however in this case the treatment effect measures the average treatment effect on the treated effect on the treated not the intent-to-treat effect – it measures the impact of engaging with the intervention rather than *being offered* the intervention.

Table 13: Effect of workshop treatment on savings balance after 1-2 months (£)

Credit Union	Swan
Treatment	138.6** (-0.016)
Constant	-1.66 (-0.892)
Observations	571
R-squared	0.01

-values in parentheses *= $p < 0.10$ **= $p < 0.05$ ***= $p < 0.01$

As we could not randomly assign participants to attend the workshop we must take care that the control group are otherwise similar to those receiving the treatment. The control group comprises all credit union members who did not receive any treatment in either trial, and statistical analysis does not show any significant differences between this group and those who attended the workshop in any before variable. This does not discount the possibility of hidden differences between the groups, especially as the workshop group self-selected to attend the workshop. The sample size also limits the statistical power.

The binary data analysis gives additional statistical support to the impact of the workshops: 87.5% of the treatment group increase their savings in the month

afterwards compared to 72.3% of the control group. This trial was conducted after Christmas so the large increase in the control group's savings balances is to be expected, though the difference is still just about significant ($p: 0.1$). It is interesting to note with the workshop, and the time period being after Christmas, the impact was felt through more participants increasing their savings, compared to the NCCU impact before Christmas occurring through fewer participants reducing their savings, though there is not strong enough evidence to determine if this is a causal finding.

4.3.1.4 Survey-based trials: Community Connectors, Coventry University College (CUC) and Quids In!

The three survey-based trials tested the impact of the intervention through surveys on a range of questions relating to regular savings behaviour, amounts of savings, ability to cope with an unexpected bill, outstanding debts, and attitude to savings, all with matched control groups.⁴⁹

These three trials suggest the intervention may have had a significant impact on resilience, through increased savings and a greater ability to cope with an unexpected expense:

- The *Quids In!* trial found a consistently significant treatment effect of the tool on respondents' ability to cope with an unexpected bill (effect size: 0.33-0.71 on a 4-point scale, $p: 0.000-0.085$, Cohen's $d: 0.40-0.79$)⁵⁰, an effect which becomes stronger when analysed as a binary variable to denote improvement or not (effect size: 22.2%, $p: 0.000$). Most forms of analysis also show a strongly significant treatment effect on participants budgeting (0.64 effect on a 4-point scale, $p: 0.001$; 0.14 effect on a binary change variable, $p: 0.013$).
- The CUC trial found statistically significant impacts on the prevalence of emergency savings (0.79 on a 5-point Likert scale, $p: 0.0745$), which supports the findings from the NCCU and Swan trials. However the Community Connectors trial found no impact of the intervention on the proportion of participants reporting they had enough savings to cover an unexpected bill (treatment effect ≈ 0).

None of these trials give robust evidence of an impact on attitude to saving or regular savings behaviour. Some of the results offer a suggestion of an impact on these, but not with any confidence to base any firm conclusions on:

- The CUC trial shows a potential impact on intention to save (a treatment effect of 0.89 on a 5 point Likert scale, $p: 0.107$) however as this is a small sample trial the use of mean-based statistical methods is flawed, so we would not place undue weight on this result. It is plausible that the tool could have an effect here, but we do not have strong enough evidence to suggest this is the case.

⁴⁹ While CUC participants were randomly assigned to be offered the intervention or not, as we could only collect data from those who responded, which was a small proportion of those offered, there is a similar self-selection problem that means this is best treated as a matched control group.

⁵⁰ The $TE=0.33$, $p=0.085$, Cohen's $d=0.4$ result is an outlier as far as the various analytical methods tried go

- The Community Connectors trial gives some support for the hypothesis that the intervention would increase regular savings behaviour, with the proportion who say they save regularly rising by 12 percentage points more among the treatment group than the matched control, though with a p-value of 0.208 this is not strong enough to base any conclusions on. Semi-parametric analysis supports this, giving a similar and statistically-stronger result (effect size: 16.2%, p: 0.012), though some forms of this regression found the impact insignificant (effect size: 11.7%, p: 0.262), meaning these results are not robust, though they may be indicative.

None offer any significant impact on outstanding debts either, which might be expected as this is not a primary objective of the intervention.

4.3.2 Qualitative results

The in-depth before and after interviews with 40 participants give us richer information on the types of changes participants made and how these came about. By considering the detail of changes made and how these occurred we can have increased confidence about whether our quantitative results are caused by the tool or whether they are statistical anomalies.

Broadly the qualitative results support the quantitative analysis, suggesting the intervention does have a causal impact on participants' savings, however the specifics appear more nuanced. For example many participants mentioned a change in attitude or intention towards saving. This supports the NCCU and Swan findings that the intervention increased savings balances, but it is curious that we did not find corresponding evidence of a change in attitudes to savings or regular savings balances among the survey-based quantitative trials, which would be more closely aligned to this. It could be that our sample sizes were too small in the survey-based trials, or that the biases involved in using self-reported results prevented this.

Participants particularly mentioned changing habits and views on the benefits and importance of saving a small amount regularly. This is a key message throughout the tool and seems to have strongly resonated with both those who attended a workshop and those who used the online tool, as the quotes below highlight:

Box 3:

Participants' quotes on how the tool impacted their attitude towards saving:

'Before, I think I just didn't realise that saving bit by bit can make much difference, but now I realise it's quite helpful.'

(JESSIE)

'I'm thinking more about saving.'

(BRIE)

'I feel more confident now and I see more reasons to save now, because if you don't save for the rainy day, then you tend to borrow and to pay back, you still have to go through the same process, which you should have done whilst saving. When you save, you don't incur the borrowing costs. So, I saw a lot of reasons why I should really save. So, that was most important for me.'

(CAITLYN)

'Attending that workshop has just opened my eyes to more things around savings.'

(CAITLYN)

Our expectation in our Theory of Change was that most participants would first make changes to budgeting and spending, then alter their saving habits with the proceeds of this. This did seem to occur, with fewer participants reporting having made changes to their savings than those mentioning a change in intention or attitude towards saving in the month after the intervention, though a surprising number talked about changes they have already made. Some even reported having opened a savings account, which tends to be a bigger mental step than a change in use of products they already own. As with attitudes above, changes to savings behaviour seemed to revolve around the focus on small regular savings as an achievable and valuable first step, and on people transitioning through our Theory of Change quicker than we might have expected. Janine's story below in particular resonated with our view of what we hoped the tool might achieve.

Box 4:

Participants' quotes on how the tool impacted savings behaviour:

'I definitely found it a lot more helpful and I was kind of able to just assess my spending and I think my saving has become a lot better as a result of it.'

(ASHLEY)

'The first thing I did, I paid all my bills on line as I do and then what was left in my bank account I put a portion of that into my savings account. And it will sit there for the nice things.'

(LEWIS)

'Even if it's a small amount, that's good...I've been doing a sort of a like saving small amounts on the sides'

(ANGELA)

'Key changes that I've made is essentially just cutting a little bit of my spending and putting that more towards my savings'

(ASHLEY)

Small, regular savings – Janine's example

Janine a single mother of two who lives in social housing has begun making small changes to her spending habits and making small amounts of savings where she can since taking the course. She is trying to make sure she has a 'rainy day fund' and has been putting 'a little bit away here and there' as the course helped her realise that 'every little bit helps'.

While we did not conduct the same in-depth interviews or structured analysis with participants in the Swan workshop cohort, an unsolicited email from one of the participants highlighted the impact this had, even at an anecdotal level. As a single data point this is not evidence of a sample-wide impact, but it does demonstrate that the tool can have a sizeable, causal impact on saving habits. It also hints at the interaction between the impact of the tool and the organisation encouraging its use, with the features and emphasis of Swan Credit Union accounts matching some of the key messages in the tool.

Box 5:
Participant's quote on Swan workshop

'[The workshop has] been really helpful to let me focus more on savings and taking 'baby' steps rather than aspiring to save one big amount. This has led to an increase of 100% in my monthly savings (from £50pcm to £100pcm). I intend to now save an extra £50pm taking the total to £150ocm

Swan Credit Union account is helpful as unlike banks/building societies, instant savings cannot be easily accessed. Swan Credit, you have to withdraw the cash via an application which then takes 3-5 working days for it to be credited. This delay is one of the main reasons I leave my savings as opposed to spending it.'

On top of the budgeting, spending and saving impacts we designed the course to focus on, it's interesting to note a number of participants mention increased shopping around for utilities as well as a variety of money-saving tips they have taken on board. We removed the focus on and aim to improve participants shopping around for financial products from the tool following discussions with expert partners who believed this started to include too much content. The tool does discuss shopping around in general as part of the practical tips for saving money, so it is not a surprise that some participants did this, and it's interesting to note most talked about doing so for utilities rather than financial products. It may also be important that the tool focused on budgeting, awareness, and saving money, with shopping around presented as a means to do this, rather than attempting to extol its virtues in general. This is a point that merits further consideration to inform the optimal design of financial education initiatives aimed at this target audience.

4.3.3 Interpretation

Our results suggest the intervention did have an impact on participants' savings and resilience to small financial shocks. In most trials, especially the NCCU trial, this is clear, strong, robust evidence of impact, with the qualitative analysis and RCT-design of the NCCU trial suggesting the impact is causal. It is important to note the CDCU trial and Community Connectors trials did not find a significant effect on savings, however. This could be due to statistical power, with both giving positive coefficients that were too small to be statistically significant in these trials, though it could be related to the nature of the trial, delivery method, or audience. It could also be that the tool has a noisy effect, and with different trials we might expect to get different results. We explore the reasons why we might have got these differential results in the next section, though on our core question – did the intervention work? – these insignificant results act to temper our answer. The evidence as a whole still points towards a positive causal impact, but we must caution that there may be a wide variety in the effect an intervention such as this may have.

The details of what effects the intervention had across the different trials offers a more mixed picture. While the intervention appears to have increases savings balances and resilience, it is less clear whether it's altered participants' regular savings behaviour or attitudes towards saving, especially over the long term. We are collecting additional data and conducting further analyses to attempt to shed light on this, but this is

primarily a key topic for future research. That the intervention appeared to have little effect on debt is expected given it focused on budgeting, spending and resilience, and together with the other results supports the need to focus financial capability initiatives on specific behaviours or outcomes they aim to change.

That the qualitative results appear much stronger, especially on regular savings behaviour and attitudes where the quantitative trials did not find statistically-significant impacts, could suggest that the level of engagement is key, as those participating in in-depth face-to-face interviews may feel more psychological and social pressure to engage with the intervention more extensively. It could also contain elements of the self-reporting biases mentioned, though the consistency of changes mentioned, their rationale and links to specific messages in the intervention, and the detail and specificity of impacts mentioned, give greater confidence that they represent real changes.

Considered holistically the results also support our Theory of Change: that the primary impact is on budgeting and spending behaviour, which then leads to changes in savings and resilience over time. As well as our quantitative results being consistent with this hypothesis, the qualitative analysis gives explicit support for this mechanism: participants almost universally link the intervention to changes in their budgeting and spending, and many mention having made further changes to savings or resilience either following their budgeting and spending changes or directly as a result of the course.

This mechanism is further supported by the NCCU binary analysis showing that the impact on savings balances was primarily driven by participants not cutting their savings as much as the control group. This could suggest a change in spending behaviour reduced any need to dip into savings, which would explain the stronger findings of changes in savings and resilience than in savings behaviour. Moreover that many of the trials were conducted in the run-up to Christmas could exacerbate this effect and limit the prevalence of increases in liquid savings balances. Testing the intervention over the longer term, at a different point in the year, could give significant insight into the type of effect it has and the mechanism by which it emerges.

4.4 Secondary Questions: who it worked for, in what form, and how many people engaged with the intervention?

We conducted multiple trials in part to provide greater confidence in the generalisability and replicability of our results, and in part to consider differences in effect based on the sub-audience targeted, the format of the intervention, and the method of engagement. To summarise:

- Section 4.4.1 analyses the demographic data consider whether the trials reached our target audience – the JAMs, centred around the Squeezed segment – and finds evidence that it did.
- Section 4.4.2 assesses whether the intervention worked better for sub-segments of our samples, finding little quantitative evidence of any difference, though the qualitative analysis suggests there are limits of who the intervention works for.

- Section 4.4.3 considers why results differ between trials, and the role the difference in format of the tool may have had on this. It finds some evidence that in-person methods are more effective, but this is not robust or conclusive, and cannot explain many of the differences between trials.
- Section 4.4.4 presents some analysis on engagement, suggesting it varied significantly between trials, though we do not have detailed or reliable enough data to draw any firm conclusions.

4.4.1 Who used the tool?

We collected a variety of demographic data from each trial. In all trials, even those with relatively small samples, there appears to be a diverse spectrum of the UK population represented on every demographic question. However, some key themes emerge, which suggest that overall we've been successful in targeting the Just About Managing group we hoped to reach, which reflects largely the squeezed and upper level of the struggling segments from MAS' segmentation analysis.

The *Quids In!* trial represents our most 'struggling' segment, being a magazine that goes to social housing tenants. As with most of the trials it is slightly more female (64%) than male (36%) with an average age of around 45. Key 'before' statistics that give an idea of financial circumstances include:

- 25% actively budget;
- 69% see saving as important, but only 45% have any emergency saving, 39% say it could cover an unexpected £650 bill, and while only 20% say saving isn't a priority over 50% say they struggle to save anything;
- Under 2% don't think about their finances much, with 23% saying it's a constant source of stress, 36% saying they have some worries but manage day-to-day, and 40% feeling in control of their finances.

Those who engaged with the Community Connectors trial appear to be in a similarly precarious position though with quite different demographics that are much closer to the squeezed group. They have an average age of 41, and are disproportionately families or single parents with dependent children, even more so than the squeezed segment: 41% & 13% sample vs. 34% & 7% squeezed vs. 19% & 6% UK average (interestingly they're wholly unlike the struggling group in this regard, as that is 51% single adults without children compared to 18% of our sample). Key before statistics include:

- 44% budget in some form;
- 46% usually run out of money each month, with 24% having triggered late or missed payment charges because of it;
- 37% save regularly, with 60% having some savings, though 56% also have debt they're worried about;

- 46% are stressed about money.

If we were to characterise the difference we would suggest that the *Quids In!* sample represents a struggling-but-managing group, while the Community Connectors trial connected with those in the squeezed group who are finding managing a difficult task.

The CUC quantitative trial has a lowest average age, around 25, with very few having dependent children and an average income close to £20,000. This closely resembles the 'Squeezed – Younger Adults' segment, especially considering the statistics below, though with elements of the struggling younger adults segment as well. Key before statistics include:

- 56% save something, lower than any of the segmented younger adults groups. Saving for short-term goals is most common, with emergency savings next and long-term savings the least frequent.
- 80% budget or plan their spending at least 'sometimes', with over half doing so at least 'often', 'always' paying their bills on time, and at least usually having money left over at the end of each month. Under 9% 'rarely' managing to pay all their bills on time and 11% have missed a payment in the last 6 months.
- 14% say they're 'living comfortably', 51% that they're 'doing alright', 27% 'just about getting by', 6% 'finding it quite difficult', and only 2% 'finding it very difficult'.

The Swan workshop trial has a higher age profile than most others, with the average around 50, is 54% female, and has an average household income of around £27,000. Compared to the CUC cohort participants here seem to be more likely to save and pay bills, though also less likely to have spare money and tend to feel less comfortable with the finance circumstances. Combined with the before statistics below it seems to closely correspond to the 'Older Squeezed' segment:

- 79% save something, with fewer than half regularly save anything in an emergency fund, preferring to save for a short- or long-term goals. Interestingly 90% have a positive balance with the credit union, implying some saving, with average 'before' balances of £700 and average loan balances of £380;
- 83% budget or plan their spending at least 'sometimes', though only 25% regularly; 56% 'always' pay their bills in full every month, 87% do so 'often', and only 4% 'rarely', yet 35% have missed a payment in the last 6 months and only 33% say they usually have money left over at the end of each month;
- 4% say they're 'living comfortably', 21% that they're 'doing alright', 50% 'just about getting by', 17% 'finding it quite difficult', and 8% 'finding it very difficult'.

The qualitative trials tend to be somewhere in the middle of most of these ranges demographically, with average age in the low thirties, private renting the most common with mortgage and social renting next highest, and with undergraduate degree and GCSEs the most common highest education level. The one demographic that marked this group out is the household makeup, with single parents being the

most common group (33%), followed by couple with children (25%) and living with parents (18%). This seems to be a mixture of the struggling – younger adults, struggling – working families, and squeezed – younger families, groups.

For the NCCU and CDCU trials we do not have the same depth of demographic data as we did not use surveys. Both NCCU and CDCU trials have an average age of 45 and are roughly two-thirds female. The average before savings with the credit union is £285 and £468 respectively, though net balances are much closer at £108 and £158 respectively. We have matched the postcode data (the first 4 digits) with the 2011 census, however, which enables us to estimate social grades, levels of deprivation, and ethnic diversity (Table 14).

Table 14: Credit union sample location-based estimate of social grade and deprivation

	Social grade (%)				Deprivation (# dimensions ⁵¹)				
	AB	C1	C2	DE	0	1	2	3	4
NCCU	15.3 %	30.6 %	19.2 %	34.8 %	36.2 %	33.0 %	22.6 %	7.4 %	0.9 %
CDCU	11.0 %	26.0 %	20.7 %	42.4 %	30.5 %	33.3 %	25.6 %	9.4 %	1.3 %
Combined	12.2 %	27.3 %	20.3 %	40.3 %	32.1 %	33.2 %	24.7 %	8.9 %	1.2 %
UK Average	23.0 %	30.9 %	20.6 %	25.5 %	42.5 %	32.7 %	19.1 %	5.1 %	0.5 %
Urban Average	22.1 %	31.1 %	20.1 %	26.8 %	41.3 %	32.7 %	19.8 %	5.6 %	0.6 %

Overall it seems clear that all trials study a sample that is less cushioned and more squeezed than the UK average, but where few are in financial difficulties or have other acute financial problems. As such we seem to have hit our target group: people who are Just About Managing, primarily matching to the squeezed segment but with some chunks of the struggling segments who are still managing on a day-to-day basis.

4.4.2 The impact of intervention on different groups

While the above shows our results apply to the JAM group broadly, there remains a question of whether different sub-groups experienced different impacts from the intervention.

In our quantitative analysis we tested the impact of demographic variables by including demographic and other characteristic variables in multi-variate regression, and by splitting our samples based on these variables and analysed each sub-sample independently. Splitting the NCCU trial by gender or by various age groups had no discernible impact on the treatment effect, though the smaller sample sizes did make

⁵¹ The four dimensions of deprivation counted are: employment (any member of a household is either unemployed or long-term sick); education (no person in the household has at least level 2 education (see highest level of qualification, and no person aged 16-18 is a fulltime student); health and disability (any person in the household has general health 'bad or very bad' or has a long term health problem); and housing (household's accommodation is either overcrowded, with an occupancy rating -1 or less, or is in a shared dwelling, or has no central heating).

it lose significance in quite a few cases. The variance was higher for men than for women, in part through a lower sample size and in part through male savers making bigger changes in both directions, though the treatment effect estimators remained very similar.

Splitting the NCCU trial by before savings balances did have an impact, with those having higher starting balances driving the impact of the tool, and much smaller impacts on those with low balances. However, this could be caused by those with larger balances having a greater capacity to alter these, such as having higher incomes. Moreover, as the main treatment effect of the light touch tools within the time frame we studied comes from reducing the number of people who cut their savings balance, rather than nudging people to increase it, it is not surprising that the bulk of this effect in magnitude comes from those who have a high existing level of savings they can choose not to cut.

Applying the above to CDCU data also shows no significant impact of splitting the trial. Sample sizes for the other trials were too small to allow for splitting in this way, with large amounts of noise rendering results insignificant or spurious.

The qualitative analysis provides a different viewpoint on this question. In terms of who it worked for, the interviews and focus groups suggest most participants benefitted from the tool with many having made subsequent changes they attribute to the course. There did not seem to be a clear pattern among the broad group of who it worked better for. However, there were a few people it did not work for, which we believe help to define the limit of who this tool works for.

Two participants' stories in particular illustrate this well, and while they're individual stories they seem potentially representative of broader groups:

- The case of Henry, a full-time carer who relies solely on benefits for his household income. He already manages his money incredibly carefully through necessity, budgeting carefully and following all the tips for saving money the tool suggests. Henry's struggles come entirely from his low income, and without a change here it would not be possible for him to gain resilience to further financial shocks. Henry's story shows that as well as the tool not being designed for those with acute financial problems such as problem debt, it also does not work for those on the lowest of incomes for whom budgeting is a necessity to manage on a day-to-day basis and not something that can help propel them towards resilience.
- The case of Doris, a high earner with large credit card debt. While she appreciated the acknowledgement of the emotional aspect of spending in the workshop, and admits to poor impulse spending habits and her need to gain more willpower to improve these, she felt the tool was aimed at other people and didn't help her improve her financial habits. Doris's story shows that despite the acknowledgement of the psychological and emotional side of spending money, it is not a strong enough intervention to unseat deep impulse spending habits. Doris is very much part of the target audience, but that the focus towards the broader needs of people on slightly lower incomes means it cannot focus as strongly on impulse spending habits, and that a different type of intervention

would be needed to help people in the position this person is in more strongly. There are a surprisingly large number of high earners with difficult but just-about-affordable credit card debt, and this story suggests it may be worth designing a specific intervention targeted at this group.

4.4.3 Why did the results differ between trials, and what role did the format of the tool play in this?

We conducted multiple trials in part to generate to provide greater confidence in the generalisability and replicability of our results, and in part to consider differences in effect based on the sub-audience targeted and the format of the intervention. As noted above, we found little evidence of difference by sub-audience. We did find some evidence of differences between the in-person trials, which may have had a greater impact on budgeting and spending behaviour (Community Connectors and Swan workshop), compared to the light-touch ones that did not (Coventry University College and Quids In!). However, while we found consistently positive results from the NCCU trial and the insignificant ones from the CDCU trial, we found no consistent evidence of a difference between impacts of the online and paper formats which may have explained this.

Conceptually the biggest difference in the type of intervention is the split between the light touch, remote versions of the tool (online and paper) and the more-intensive, in-person forms (the workshops and through the Community Connectors). Humans are social creatures, we tend to relate better to people than to inanimate materials, and though the online tool does contain videos to make it more real and easier for participants to relate to this is not the same as interacting with a person. Moreover, we might consider the experience of attending an workshop or session with a Connector to be a stronger experience than reading the material, analogous to the difference between attending a concert and listening to a CD.

Overall, we find some indication of this in the quantitative trials, in particular comparing the Community Connectors and Quids In! results. However, this it is not conclusive, and the more in-depth qualitative analysis shows striking similarity between the participants' response to both. What does seem clear is that both versions had an impact, and any in-person methods do not appear to be as markedly more effective as we might have expected. Since light touch interventions are much less expensive it suggests there is definitely a place for them, though more research into the relative efficacy and cost of these compared to in-person methods is needed to firmly conclude on cost effectiveness. As our trials were primarily aimed to test whether an innovative, behaviourally-informed type of financial education intervention could work we do not have detailed enough results to firmly conclude on this relative efficacy.

Our results give no consistent pattern for differences between other forms of the intervention. Initial analysis of the NCCU trial suggested the paper version may have been more effective than the online one, however this was not a robust finding, and more in-depth analysis on a longer time-series of NCCU data has contradicted this.

The inconsistency of a difference between paper and online results suggests other factors carry primary responsibility for the difference between the NCCU and CDCU results. This could be caused by differences between their members, in the timing of

the intervention, in the delivery method, or a statistical anomaly. It is worth noting that while both trials offer consistently different results in terms of whether they have a statistically-significant impact on savings, when comparing the results of each it is not clear there is a consistently statistically-significant difference.⁵² As such we cannot be confident that the difference in results between the two trials is not natural variation we might expect between repeated experiments.

Appendix 4 explores the analysis on how the format of the intervention affects the impact in more detail.

4.4.4 How well did the intervention engage participants?

Conceptually, our core objective to assess how effective our intervention was can be split into two questions: how effectively it reached the target audience, and what impact it had on those it managed to reach. In practice, doing this robustly requires extensive data on both elements. We had hoped to analyse engagement directly, as part of our secondary objective to provide deeper insight into how and why the intervention worked, but technical issues collecting data on engagement for each trial prevented us from being able to do so robustly within the tight timescale we had to conduct this research. As such, this is primarily a topic we recommend for future research, though we have attempted to draw what insight we can from the data we have. This section summarises this analysis, with a more extensive presentation of it included as appendix 5.

Previous research finds that intensive, expensive interventions, that use pro-active methods of engaging participants, are required to impact hard-to-reach groups such as the JAMs.⁵³ As behavioural research suggests many more people will engage with something that's sent to them compared with something they have to actively seek out, we aimed to test whether such pro-active engagement methods could be successful as part of a cheap, scalable, 'light touch' intervention aimed at the JAMs.

Were our engagement methods successful in reaching the JAMs? The results in sections 4.2, 4.3, and 4.4 above suggest they were, as we would not see significant impacts of the intervention if participants had not engaged with it. Moreover, the limited engagement data we do have recorded 4231 visits to the online tool from at least 937 active participants. Estimating what proportion of those who received a 'light-touch' invitation to use the tool this represents, using the data we have, requires us to make many assumptions, so at best our analysis gives a rough indication.

Overall, this analysis suggests somewhere around 20% of those who received an email invitation to use our tool may have done so, though this appears to be much lower for students receiving the invitation from their college (around 10%) compared to credit unions members being invited by their credit union (around 30%).

⁵² NCCU treatment effect on savings is positive and statistically-significantly different from zero, whereas CDCU's is not. However, as CDCU's treatment coefficient is positive, albeit not significantly so, when comparing the treatment effects between the two trials the difference is not consistently significant. As such while we can be confident that the NCCU trial shows an impact, and have no such confidence the CDCU one does, we also cannot be confident that they couldn't both be results drawn from an identical trial repeated.

⁵³ Kaiser & Menkhoff, op. cit.; Fernandes, et. al., op. cit.;

Engagement appears higher among those who have opted in to receive the intervention by submitting a pre-intervention survey (around 40-60%), and much higher among those who took part in in-depth interviews (all reported some engagement), though these are strongly self-selected groups as we faced significant difficulty persuading participants to respond to surveys and requests for interviews.

We are not able to measure engagement with the paper versions of the tool. Comparing survey response rates and impacts between the online and paper versions does not suggest marked differences in engagement between the two, though we do not have the data to make any strong argument that they are necessarily similar.

Our experience recruiting participants for the workshops, and from the Community Connectors, suggest in-person engagement is also a difficult challenge, even using relatively intensive and expensive engagement methods. We found no clear pattern of specific in-person engagement methods working, though an initial analysis of why some Community Connectors were more successful at engaging participants suggests issues of trust, privacy, and shame or embarrassment, are factors. In particular, that those who balance being a close-enough and respected-enough figure to potential users to reach a level of trust where they feel comfortable opening up about their financial issues, and being removed enough that sharing personal information or issues they might find embarrassing doesn't feel like an invasion of their privacy, were most successful. This is consistent with previous research on engagement with surveys and initiatives on sensitive topics, such as health and sexual behaviour, which also suggest there may be additional concerns about self-reporting biases if finances are similarly sensitive.⁵⁴

We stress that all these calculations and analysis are only rough indications at best, based primarily on small samples and requiring strong assumptions to interpret. Details of how we calculated these are included as appendix 5. We were not able to conduct the in-depth analysis necessary to offer firm conclusions on what works to engage JAMs or the factors involved. Engagement has emerged as a crucial topic for future research, both in considering how best to reach those who need financial capability and how much we can rely on common survey-based research methods, and we hope this limited, messy analysis can help identify some of the key aspects of this worth investigating.

⁵⁴ E.g. Kelly, C. A., Soler-Hampejsek, E., Mensch, B. S., & Hewett, P. C. "Social desirability bias in sexual behavior reporting: evidence from an interview mode experiment in rural Malawi", *International perspectives on sexual and reproductive health* 39:1 (2013);

Dunne, M. P., Martin, N.G., Bailey, J.M., Heath A. C., Bucholz K. K., Madden P. A., & Statham D. J. "Participation bias in a sexuality survey: Psychological and behavioural characteristics of responders and non-responders", *International Journal of Epidemiology* 26 (1997);

Fenton, K.A., Johnson, A.M., McManus, S., Erens, B., "Measuring sexual behaviour: methodological challenges in survey research", *Sexually Transmitted Infections* 77 (2001)

5.0 Conclusion: Theory of Change, emerging themes and policy recommendations

We have covered the impact of the tool in much detail, and considered the Theory of Change, possible explanations for the differences between results, and questions of who the tool does or does not work for. This chapter considers some of the broader themes that have emerged before suggesting some policy recommendations.

5.1 Theory of Change and mechanism of action

Our core Theory of Change was that our tool could nudge people to budget, improve their day-to-day spending decisions to live slightly within their means while making the most of the money they do spend, and that this would both aid their short-term resilience directly and lead them to build up some resilience savings. Considered holistically, the various forms of analysis from across our trials and workstreams suggest our tool has achieved this, and support our hypothesised Theory of Change as the broad mechanism through which it did so.

The quantitative trials show improvements to budgeting and spending behaviour, and some of the outcomes we would expect these to have such as reduced incidences of running out of money. The qualitative analysis strongly supports this, with emphasis placed on the positive use of the budgeting tool we designed for this target audience.

We expected saving to take a little longer to occur, leading from spending changes, and it seems this has happened perhaps a little quicker than we expected. The qualitative analysis gives examples of people having made an explicit link of using the budgeting tool following the course, then noticing they could afford to save small amounts and doing so, all within the space of a month or two. This seems to have occurred with both the workshop and online treatment cohorts. The credit union quantitative trials support this, finding robust statistically significant improvements in saving from the paper and workshop versions of the tool, albeit not universally significant impacts. The light touch versions seem to primarily reduce the number of people cutting their savings, at least at an initial effect, whereas the workshop seems to encourage people to save more, but more research is needed on these details.

Moreover, the findings of impacts on targeted behaviours and outcomes while showing much smaller or insignificant impacts on peripheral financial behaviours, outcomes, and feelings of confidence, both support our Theory of Change and the concept that to be successful financial education needs to be targeted at specific behaviours and outcomes. This is in marked contrast to the more common finding, when testing more general financial education interventions, that they improve confidence and knowledge but have little impact on behaviour – as we found in our study of the longer Managing My Money course⁵⁵ – but supports more recent studies that show interventions targeted at specific behaviours can be effective in changing them.⁵⁶

⁵⁵ Collard and Brambley, *op. cit.*: the full, in-depth Managing My Money online course had its largest impacts on confidence, with potential impacts on outcomes and much less evidence of any impact on behaviour.

⁵⁶ Kaiser & Menkhoff, *op. cit.*, and Fernandes, *et. al.*, *op. cit.*, both present meta-analyses showing the ineffectiveness of traditional financial education and the potential for targeted ones.

There are many unanswered questions on the detail, however, which we suggest as the subject for further research. In particular as to the format of intervention, the importance of and ways of improving engagement, the specific behaviours and outcomes targeted, the detailed design of the intervention, and precisely what groups it does or doesn't work for. We do find good evidence that a short, low-cost, behaviourally-informed intervention can work to improve financial behaviour and resilience, and can do so for people who are Just About Managing who are most in need of financial capability but tend to be hard to reach.

5.2 Emerging themes

There are a number of insights into emerging themes arising from this report. These themes have also been raised in other behavioural research.

5.2.1 The importance of small changes

The tool emphasised the importance of making small changes in day-to-day habits as it is these which can yield big benefits over time. This message resonated strongly with users, particularly in the workshops, but throughout the treatment types. It appears to help participants overcome some of the natural inertia and mental barriers that make changing our habits difficult, such as analysis paralysis and loss aversion.⁵⁷ Box 6 illustrates some views of workshop participants.

BOX 6: The big power of small changes

'...when I was in the workshop, I realised I'm not the only one in this situation and it's better to make actions to change instead of just leaving the situation and letting it grow and get worse. So, that's what I picked up from the group and it just impelled me a bit to make some changes. Just small changes. That's what the leader of the group said, just make small changes and then it will have an impact eventually.'

(YASMIN)

'...when I was in the workshop, I realised I'm not the only one in this situation and it's better to make actions to change instead of just leaving the situation and letting it grow and get worse. So, that's what I picked up from the group and it just impelled me a bit to make some changes. Just small changes. That's what the leader of the group said, just make small changes and then it will have an impact eventually.'

(YASMIN)

'I've always wanted to save but I found it to be unachievable, but I think the course has said... just start small and work your way up. It doesn't have to be a challenge. Even £5 is something.'

(YASMIN)

'I think once you achieve the small goal, you just feel... you have a sense of achievement. You've got some money at the end of the week so it's helpful.'

(JESSIE)

⁵⁷ E.g. Madrian & Shea, op. cit.; O'Neill, B., "Overcoming Inertia: Do Automated Saving and Investing Strategies Work?", *Journal of Family and Economic Issues* 28:2 (2007)

5.2.2 Focus on practical tools and tips that acknowledge the barriers we face

With a topic as emotive as money and spending it's easy for participants to feel criticised, shamed, or lectured at. Tools or courses are created by experts who have focused their design on what people should do and what they should know, not what's actually feasible, useful, and practical to fit into their daily lives. For a tool that aims to alter people's day-to-day financial habits, it is crucial to be realistic and work with boundaries and barriers which human beings face on a day-to-day basis.

These barriers can be both people's circumstances and their underlying human behaviour, as both can be intractable problems preventing us doing the 'right' thing. Financial education will not change our underlying psychology or create additional income, and interventions that attempt to 'fix' these fundamental issues or ignore them and strive for the ideal actions have consistently failed to be effective.⁵⁸ Designing effective interventions requires acknowledging and working with the underlying reality we cannot change towards *feasible* improvements, potentially utilising aspects of our psychology or common circumstances to help nudge us towards better habits.

One way we applied this was to design our tool to empower and help participants define and achieve their financial goals – with a nudge towards resilience saving – rather than dictating what their goals should be.

Another key aspect was designing our budgeting tool and the guide on using to be a simple, flexible, working tool people could fit into their daily lives. It was widely praised by participants for being a useful and useable tool they could keep up with day-to-day, and as a way to discuss financial issues within their households. We focused our budgeting not on coming up with the ideal budget, but as a way to make active choices and small changes that improve spending habits. We emphasised the point that if it is impossible to follow a budget then the budget is wrong and needs amending.

Our results are significantly stronger than most previous research we have seen on similarly 'light touch' financial education interventions which have tended to be focused on imparting knowledge rather than working with our underlying traits to improve our behaviour.⁵⁹

5.2.3 The social aspect of the tool

One of the social factors which participants saw as positive is that were not alone with financial difficulties and the workshops in particular became a 'safe space' to share stories of financial difficulties.

A surprising number of participants mentioned sharing the tool and using it to start discussions about money and spending with family members. This was not anticipated at the outset of the research, but it is a highly valuable outcome. We strongly recommend further research be done on how to maximise this social effect to magnify

⁵⁸ de Meza, et. al., op. cit.; Kaiser & Menkhoff, op. cit.

⁵⁹ Kaiser & Menkhoff, op. cit.; Fernandes, et. al., op. cit.

the impact financial education can have. Box 7 illustrates some views of workshop participants.

Box 7:
Social aspects of the tool

Jane is a single mother who works part time, lives in social housing and returned to education to complete her master's degree. The workshop was an important moment of change for Jane because it led her to realise that she is 'not the only one in this situation and it's better to make actions to change instead of just leaving the situation and letting it grow and get worse.' Jane liked the workshop because it allowed her to learn 'from other people that were non-judgmental and have the same experience as well, but come from a different lifestyle'.

Debbie who is also studying towards a postgraduate degree who lives with her two children and partner. Debbie felt that speaking to other members of the workshop helped her feel less guilty about her situation— 'when you hear other people talk about it as well, you feel like okay, it's not only me'. This experience helped Debbie come up with a more long-term and sustainable budget plan.

For Ali sharing stories at the workshop helped him gain more 'awareness' of his own situation. Ali is currently completing his undergraduate degree, he lives with other students in a shared house. Ali felt that 'talking about how much each of us were spending and kind of what people were saving up' at the workshop helped him realise 'how much money you're actually spending and you're just like quite surprised with it'. The workshop helped kick start Ali into thinking about how he can begin saving for the future.

5.2.4 The importance of moments of change

Previous research has suggested people are more willing to change their behaviour at moments when their lives are changing in other ways, such as starting a new job or having a baby.⁶⁰ Our qualitative findings also suggest that intervention also has the potential to be a trigger for changing behaviours. For many participants the tool acted as a reminder of what they know, what they want to do, and the importance of keeping track, budgeting, saving small amounts, and generally being pro-active about their finances – all of which are easy things to forget for busy JAMs and Squeezed groups.

5.2.5 Broadening what we consider financial education

We purposefully avoided referring to our intervention as a 'course' or 'education' wherever possible, as these terms tend to act as a barrier to engagement with those in our target audience. Tools designed to help consumers make better decisions, especially when combined with guides on how to use them, practical tips, and personal stories or examples of the benefits, are financial education, just not in the traditional knowledge-focused form. With the National Strategy for Financial Capability embracing the need to change attitudes and behaviours, more than knowledge and skills, we need to broaden what we think of as financial education and consider the

⁶⁰ E.g. Kaiser & Menkhoff, op. cit.; Fernandes, et. al., op. cit.

best ways to help consumers towards better financial decisions and outcomes. Our tool attempted to do this in one particular way, and our results seem to support this being a useful direction to go in.

5.3 Implications for Policy and Practice

The core implication for policy is that low-cost, light-touch financial education can cause a significant improvement in the day-to-day financial behaviours and resilience of people who are Just About Managing – those most in need of financial capability but who lack the trigger to engage with it or make improvements. Previously only expensive, intensive interventions had been shown to generate significant impacts on these behaviours and outcomes, so the possibility of positive impacts from much cheaper interventions has significant implications for the type of interventions that should be funded.

Our results indicate that it is possible to engage hard-to-reach groups with light-touch methods such as emails and letters, but that their effectiveness can vary widely. We know far more about designing financial capability interventions that what works to engage those who most need it in practice, though there is a rich and growing literature on social marketing we can draw on for inspiration we can test.

Building on previous research, our findings support some general design principles for financial education interventions aimed at improving behaviour across the mass population (or more general hard-to-reach groups where intensive methods are not cost-effective):

- focus interventions on specific behaviours or outcomes;
- keep them short and practical;
- accept people’s reality and humanity, and work with it to nudge small changes, rather than aiming for the ideal that financial experts recommend we know or do;
- broaden the concept of financial education, away from ‘education’ and towards the provision of timely, practical, relevant pieces of information, outside the classroom;
- build engagement into an intervention from the start, making it real, of clear immediate relevance, and easy to engage with minimum effort required for participants;
- bring the intervention to people rather than requiring them to actively choose to engage or find an intervention with which to engage;
 - this could mean in the workplace, through trusted and relatable intermediaries, or by supporting informal support schemes in communities (e.g. places of worship, online communities, and parent and toddler groups as well as location-based communities);
- tailor the format of the intervention and engagement to the target audience, and remember multiple formats can enhance each other and help those with different learning styles – e.g. physical (or available to print) copies of tools enhance online courses and guides;

- build in social aspects where possible, or interventions which can utilise existing social elements, including supporting participants to share tools and use them to start conversations with friends and family.

Finally, although many questions remain and more have emerged, our results show the potential for interventions to have significant positive impact but also that they are only part of the solution to the poor financial behaviour that plagues the population – especially those Just About Managing. Smart, behaviourally-informed financial education has a clear part to play, and can be scaled cheaply, making it a potentially effective policy tool. However, it is far from a sole solution we can rely on, with many problems of and caused by consumer financial behaviour remaining, even in the most effective trials. There remains an imperative to enact solutions outside financial education that improve outcomes for consumers who continue to make poor decisions, and help financial markets work better for them.

6.0 Limitations and Future Research

The primary limitation we faced was time. Conducting multiple trials with multiple external partners gave us valuable data we would not otherwise have been able to get, though this too significant time to do. Being able to collect a longer time-series of data would enable us to both assess longer-term impacts and analyse changes in regular savings behaviour over time, which is crucial for building resilience. It would also grant more time for the in-depth analysis needed to understand the details and nuances of what works and why.

The use of objective data was a vital feature, as in addition to the methodological issues with survey data, gathering enough survey responses to get reasonable sample sizes proved difficult. We are thankful to our partners who spent considerable effort encouraging participants to respond to surveys. It is notable that while we have some significant results, there are many effects that appear sizeable but where we do not have a large enough sample for us to have confidence in this. In the future we hope to rely more on large sample, customer-level objective data to measure impacts.

The combination of quantitative and qualitative analysis was positive, and helped give a richer impression of what impacts the intervention had and the mechanism it did it through. Discussions to synthesise results were fruitful and fascinating, however data protection issues and the short timeframe limited how much the diverse methodologies could be integrated. More generally the broad concept of our methodology appears valuable, and much of it worked in practice, but the details need to be refined to make it run more smoothly and effectively. There may be value in incorporating lab experiments as well, to offer an additional way of analysing the impacts of changes in the details and the mechanism by which they occur.

We are continuing to analyse data from this project, with plans to submit a few papers to academic journals based on this more technical analysis. As an academic institution we hope to continue conducting research in this area, and the links we have developed with partner organisations are valuable in helping us run future field trials.

While we have developed some insight into what works to improve the financial behaviour and resilience of those just about managing, we have uncovered at least as many new questions for future research as we have answered. These broadly correspond to three core themes for future research:

- Testing more impacts in more detail using objective data: while we have seen some consistent broad themes emerge on the impacts the intervention had, the details of which behaviours have changed for which groups is less clear. Moreover the qualitative analysis suggested there may be wider impacts on spending behaviour which would be useful to explore.
- Engagement: testing what works to maximise engagement from the JAMs/Squeezed when using light touch, scalable measures.
 - Could insights from social marketing and behavioural science be helpful in designing better ways of engaging those who could benefit?
 - What is the role of emotions such as trust or shame in helping people engage and removing the taboo from financial discussions?

- Are there other ways we could get the right, timely information in front of people without them needing to look for it?
- Designing and testing new tools: is there a way to build low-cost, scalable tools with a social element?
 - If we broaden the concept of financial education to focus on timely information provision outside the 'learning' paradigm, what does this look like in practice?

Appendix 1: Three Core Attributes for Designing Our Tool

Expanded from 2.5: The Intervention

Section 2.5 introduced three core attributes – changes from previous financial education initiatives we should incorporate into the design of our intervention – that emerged from prior research and our design process:

- **Scope:** radically reducing the amount of content and limiting the scope of topics to focus on the key relevant areas where hope to alter behaviour – budgeting, spending, small resilience saving, and avoiding common debt pitfalls;
- **Style:** ensuring the style is practical, positive, interactive, relatable, easy to understand, and focused on actions participants feel are relevant to them, utilising nudges to promote specific changes in them, rather than on any content we believe they should know;
- **Delivery method:** proactively delivering the intervention to participants through a trusted organisation they have an existing relationship with, and in a variety of formats to suit different people.

This appendix expands on each of these, explaining in more depth the decisions we made, the rationale for them, and how we expected these to improve the effectiveness of our tool beyond previous interventions.

Scope

We purposefully limited the topics covered to the three areas we aim to influence – budgeting, small saving, and avoiding common debt pitfalls – as insights from behavioural science and discussions with partners and other experts on our target audience suggested the need to focus strongly on the behaviours we aim to change and for the tool to be extremely short. The tool is split into three linked sections covering these topics, with the bulk of material on budgeting and how to use it to enable the other two areas. These three areas are key to preventing financial difficulty, as if someone budgets well, saves small amounts in case of emergency and avoids debt pitfalls then it would require a big external shock to push them into financial difficulty. However, this meant not covering many areas experts recommend people know about, such as pensions and insurance, and with optional sections participants have to actively choose to view on mortgages and benefits. It also meant keeping sections brief and practical, with conscious decisions made to limit the depth of each topic beyond the level previous financial education has commonly done. This focus is one of the defining aspects of our tool we suspect will increase its impact on the behaviours targeted, a point we aim to test.

Style

Behavioural science research suggests that, in general, interventions which are positive, practical, action-oriented, easy-to-use, timely, immediately and intuitively relevant to the audience, enjoyable, short, relatable, and interactive, tend to be more

widely use and have larger impacts.⁶¹ Discussions with experts on our target audience supported this, and led us to design the tool as a step-by-step guide, rather than a financial education course. Through using the tool participants create their own budget using a simplified version of our tried-and-tested *Managing My Money* planner, keeping the course practical, interactive, and focused on the behaviours we aim to improve: budgeting and making active spending decisions, and increasing resilience saving. We aimed to keep the steps simple, clear and fully explained without patronising participants who may be slightly more knowledgeable. To help with this and make the process more real and seem achievable the tool includes a short case study following Jenny, who as a friendly and engaging 28-year old insurance clerk on a low-middle income is relatable as part of the target audience with similar issues and aims.

The tool is explicitly focused positively on empowerment throughout, on helping participants make active decisions about how they want to manage their money. Often financial education, similar to messages about healthy eating, exercise, smoking or drinking, tells people what they should do, which can easily cause people to switch off. By making budgeting a positive decision about where to spend your money and how to get the most happiness from it the tool attempts to stop it being a chore and improve people's motivation to use it. The tool even includes an imagination exercise to help decide what financial goals would have the biggest positive impact on participants' lives.

The course also includes practical tips, both from experts and ordinary people, for budgeting, spending less, saving money, and other aspects of day-to-day financial management. In the workshops we've run participants contribute and discuss their own tips. To some extent these are inspired by Money Saving Expert, one of the few personal finance resources widely used by JAMs, which is filled with practical tips and includes a forum where people discuss and offer their own.

The final key stylistic point is the use of behavioural techniques to nudge participants' behaviour. In particular, the tool uses:

- A soft commitment device, asking participants at the end to write down one action they will change following the course, which has been shown to make people more likely to follow through with it.⁶²
- A default, with the goal to start saving small amounts each month pre-filled in the budgeting tool, which participants can remove but forces them to actively decide to if they wish.
- The halo effect, by contrasting the relatable character of Jenny with our 'resident expert' Martin in the case study, with Martin providing advice to Jenny, our biases nudge us to consider Martin as a trustworthy expert.
- Short-termism, inertia and gamification, through using a "savings challenge" to nudge people to make a change for a limited time, knowing that inertia will

⁶¹ Dolan, P., Hallsworth, M., Halpern, D., King, D., & Vlaev, I., *MindSpace: Influencing behaviour through public policy*, Institute for Government (2010);

Dolan, P., Hallsworth, M., Halpern, D., King, D., Metcalfe, R., & Vlaev, I., "Influencing Behaviour: The mindspace way", *Journal of Economic Psychology* 33 (2012);

Behavioural Insights Team, *EAST: Four simple ways to apply behavioural insights* (2014)

⁶² Bryan, G., Karlan, D., & Nelson, S., "Commitment Devices", *Annual Review of Economics* 2 (2010)

likely turn it into a habit. Gamification is also employed by having a digital badge participants earn for completing the course, which itself is of no value but adds a mental nudge to finish.

- Many of the practical tips use behavioural techniques, such as suggesting people set direct debits to go out the day after their income comes into their bank account to avoid the temporary feeling of wealth that can be spent and make budgeting decisions easier, or suggesting participants budget to increase one area of spending that makes them happy to provide a more immediate motivation for cutting other areas (by much more) than an abstract idea of future security.

Delivery method

To be scalable, engaging, and deliver the tool proactively to the target audience, as we knew the tool had to be to reach our target audience and be effective in getting them to use it, we knew the core tool would be online. As we know people differ in how they like to learn or engage, and were concerned about inclusion, we adapted it as a paper version for those who prefer it that way. These were delivered to sub-groups of the target audience by partners who had an existing relationship with that group: 3 credit unions to their customers and Coventry University College to its students, by email and letter; Social Publishing Project through their Quids In! magazine to social housing tenants.

In addition to the core method we also delivered the two using two in-person methods: workshops with groups from a credit union and Coventry University College; and through Community Connectors. The latter is a project set up in conjunction with Community Action Milton Keynes to train volunteers to provide the first stage of financial help to people in their community using our tool. As in-person contact tends to aid behavioural change and motivation we hope to see whether slightly more interventionist methods of delivery increases the impact of the tool. Overall the different delivery methods, sub-groups and contexts enable us to assess the range of people for whom the tool works, what techniques work to reach them, and provide more generalizable findings across the project as to whether or not the tool works.

Taken together these three points define the innovation in our tool, and the rationale for this. In particular, the use of behaviour science and insights from previous research and financial education initiatives have enabled us to develop a tool we believe is much more likely to impact participants' financial behaviour, and hence their outcomes, resilience and wellbeing. Improving the habits of such a hard-to-reach group with a light-touch, scalable solution is still a difficult task, but these innovations give us hope despite lack of impact previous initiatives have had here, and the benefits of discovering a tool of this type that works would be huge. Indeed discovering it does not work would still be a useful finding.

Appendix 2: Quantitative Methodology

Expanded from 3.2: Quantitative Methodology

A2.1 Discussion of Quantitative Analytical Methods

Our analytical philosophy is to focus primarily on and report findings from what we believe is the most appropriate and powerful statistical technique for each trial, while conducting many different types of analysis to check for robustness. This is not an attempt to data-mine in search of positive results, but to ensure we don't place undue weight on one result if other (also-valid) techniques give markedly different results.

One of the benefits of randomised-control trials is that very simple statistical methods give valid results. Where our dependent variable is continuous, such as our analysis of credit union savings balances, OLS linear regression or student's t-tests are unbiased and powerful as well as simple to interpret, so are used as the primary analytical methods. With the stratified-random allocation used in the credit union engagement trials, the use of control variables is not required, maximising the statistical power, and in such univariate cases linear regression and t-tests give the same results. Regression additionally lets us investigate interactions between the treatment effect and other variables, such as demographic variables or before savings, if we wish. These trials meet the criterion for level 5 on the Maryland Scientific Method Scale, the highest quality of experimental evidence, and additionally through using objective data removes all concerns of response rate and self-reporting biases in surveys (though as mentioned we caution that no social science trial is ever perfect).

For trials where randomisation was not possible we compare the before variables for treatment and control groups to consider how close the match is, and conduct the regressions with the key before variables as controls as well as univariate regressions to check for robustness and account for any differences where necessary. This becomes a difference-in-differences estimation, which is still valid, though has an additional source of error through the potential differences between treatment and control group that may not be fully captured by control variables and thus have the potential to bias the treatment effect. Where the dependent variable is continuous these OLS is still an appropriate measure. These trials would class as a 3 on the Maryland Scale.

In both cases there can be issues using OLS estimation or t-tests, in particular where residuals are not normally distributed or not of constant variance and when using a categorical (e.g. Likert) or binary dependent variable. However there is a large and growing body of literature that empirically demonstrates the flaws with simple parametric methods such as these are overstated, and that even with large violations of assumptions about normality and the type of scale they give valid results.⁶³ Lumley et. al. (2002) states that "[t-test and linear regression's] major usefulness comes from the fact that in large samples they are valid for any distribution" and argues that binary

⁶³ E.g. Lumley, T., Diehr, P., Emerson, S., & Chen, L., "The Importance of the Normality Assumption in Large Public Health Data Sets", *Annual Review of Public Health* 23 (2002); and Norman, G., "Likert scales, levels of measurement and the "laws" of statistics", *Advances in Health Sciences Education* 15:5 (2010); offer two such demonstrations, and cite many others that show similarly.

dependent variable data is one form where this is usually the case. Norman (2010) focuses on Likert data, concluding that even when its assumptions do not hold:

Parametric statistics can be used with Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, with no fear of “coming to the wrong conclusion”. These findings are consistent with empirical literature dating back nearly 80 years. The controversy can cease (but likely won’t).⁶⁴

We believe it is still important to consider these issues, and overreliance on any one method without checking for robustness to statistical technique or model specification is to be avoided. As such we will primarily estimate using OLS, as both the simplest and easiest to interpret method, but will conduct logit and non-parametric regressions to test for robustness and will report any significant differences between results.

⁶⁴ Norman, op.cit., p. 7

A2.2 Detailed Table of Quantitative Trials

Trial no.	Name	Delivery method	Trial type	Variables	Sample size	Data dates	Treatment effect measured	Notes
1	New Central Credit Union (NCCU)	Online & paper	Encouragement RCT, objective data	Objective savings	1935: • Exp: 984 o On: 626 o Pa: 334 • Con: 951	Before: 25/10/17 After 1: 7/12/17 After 2: 25/1/17 After 3: 22/2/18	Intent to treat (ITT)	As the sample covers the whole population, whether they used the tool or not, the treatment effect here is the Intent to Treat (ITT) - the average impact of being offered the tool, not of using the tool. This is the best measure of the likely effect if rolled out in the same manner, as in reality not all offered will use the tool. It is much lower than the average treatment effect on the treated (ATT) and if we can get data on how many took it can be scaled up.
2	Coventry and District Credit Union (CDCU)	Paper	Encouragement RCT, objective data	Objective savings	1322: • Exp: 658 • Con: 664	Before: 21/07/2017 After 1: 4/10/2017 After 2: 22/3/2018	ITT	As NCCU.
3	Swan Credit Union	Workshop	Structured trial with naturally-similar control group, objective data	Objective savings	599: • Exp: 18 • Con: 581	Before 1: 13/9/17 Before 2: 6/11/17 Before 3: 17/1/18 Before 4: 1/3/18 After: 30/05/18	Conditional average treatment effect on the treated (ATT)	
			Uncontrolled before & after survey	Survey data on budgeting, spending, saving, and attitudes	23	Before: 9/3/18 After: from 10/4/18	ATT	
4	Coventry University College (CUC)	Online	Encouragement RCT, survey data	Survey data on budgeting, spending, saving, and attitudes	34 (before & after): • Exp: 17 • Con: 17	Before: 16-28/02/18 After: from 19/3/18	ATT	While this is an encouragement trial we ask participants if they've used the tool, and can analyse only those who have as the treatment group. As respondents to a survey are themselves a self-selecting group this is a conditional ATT.
5	Quids In! (QI)	Online & paper	Structured trial with naturally-similar created control group, survey data	Survey data on budgeting, spending, saving, and attitudes	121: • Exp: 100 • Con: 21	2 cohorts: • Before: Sept-Nov; After: Feb-Mar • Before: Nov-Jan; After: Feb-Mar	ATT	To create a representative control group we surveyed members of the Quids In! readers club, a separate cohort from those invited to use the intervention but drawn from the same broad population. Demographics indicated the groups were similar, so with a small sample size we did not use artificial matching techniques.
6	Community Connectors (CC)	In person	Structured trial with created control group, matched to treatment group, survey data	Survey data on budgeting, spending, and saving	121: • Exp: 63 • Con: 58	• Before: Sept-Mar • After: Oct-Apr After data collected individually ~1 month after treatment for all participants	ATT	We surveyed non-financial volunteers from similar geographical areas as a control group. As this group differed significantly from the treatment group in three initial variables - the proportion who regularly saved, budgeted, or worried about their debts - we performed matching analysis on these to ensure comparability. This reduced the effective control group to 44.

A2.3 Quantitative Questionnaires

A2.3.1 Guiding Questions for Community Connectors Survey

These questions are designed to guide the conversation, help you uncover the basic financial circumstances and issues each person you interact with has and hence where you can provide some help (as well as to record the data we need to assess whether the program is working).

You may wish to ask some of the questions below directly – they can be quite useful as prompts to help the other person think about an aspect of their finances they may not have considered before – though you may prefer to just have a conversation about their finances which ends up covering their answers. Feel free to do this however feels most natural to you. All we ask is that for each interaction you record an answer to each question. If someone refuses to answer a question that's ok, skip that one, but hopefully these are simple, easy questions that fit in nicely to having a chat about their finances.

All but two are simple yes or no questions, or for basic demographics picking the option that best fits the person. For the first and last question, about their worries and one action they'd like to take, it would be great if you could summarise their answer in a sentence or two. That's all the data we need, though if you'd like to record any more detail or ask any additional questions do feel free to include it.

Getting started – an open question

It's up to you how you start and continue the conversation, though our suggestion would be to ask a general question – do they have any financial worries or specific issues they'd like to ask you about? This can lead you into the right areas, using follow-up questions to delve deeper into their financial circumstances, their concerns, and any questions they have about finance, to help you point them in the right direction. You may find this answers most of the below and tends to be more natural than starting with a list of questions. Anything you haven't covered in this you can move onto once you've discussed the main issues or questions they have.

- Do you have any financial worries? What motivated you to talk to a Community

Connector?

Answers to record - Yes/no questions

Debt:

- Do you have debt you're unable or think you won't be able to repay? – if so refer them to professional debt advice as this is their most pressing issue, though you can try to help them budget or in other aspects if you feel appropriate.

- <if no> Do you have any debt you're worried about or are struggling (but managing) to repay?

Savings:

- Do you have any savings you could use if you had an unexpected bill?
 - <if yes> Do you save some money each month?

Spending

- Do you usually run out of money by the end of the month (answer yes if they mention that they usually dip into their overdraft or run up high credit card bills)?
- Have you missed any payments or bills recently (e.g. rent/mortgage, electricity, credit card, etc.), or been charged any late payment fees?
- Do you have a budget or a spending plan?

Confidence & stress:

- Do you feel stressed about money?
- Are you confident about your finances/managing their money?

Basic demographics – pick the one that best fits

- Age group: under 18, 18-24, 25-34, 35-44, 45-54, 55-64, 65+
- Housing type: social rented, private rented, own with mortgage, own outright
- Who lives with them: single no children, single with children, couple no children, couple with children

Final question – if you could change one thing...

At the end of your conversation, ask them to write down one (financial) action they'd like to take. This can be a habit they want to start or stop, a product they'd like to take out, or any other change they'd like to make. Let them come up with it themselves, though if you feel they need prompting you might want to think back to your conversation and suggest some things (e.g. start saving, create a budget, shop around for car insurance, spend less on their weekly shop, buy a Porsche, etc.). Get them to write it down on a piece of paper, and record their answer here.

- What one action do you most want to take about your finances?

A2.3.2 Quids In! Money Personality Quiz



Quids In money
personality survey.p

A2.3.3 'Master' Questionnaire & Response Coding (used for Coventry University College and Swan workshop)



CUC and Swan
Survey Scoring.pdf

Appendix 3: Qualitative Methodology

Expanded from 3.3: Qualitative Methodology

The qualitative analysis used in-depth, semi-structured interviews and focus groups to collect data from participants in four trials with two of our Coventry-based partners (one workshop and one online with each partner) as detailed in the table below. This enables us to assess the intervention on samples drawn from two different populations and as an online and in-person tool. This data was analysed using structured thematic analysis, aided by computational content analysis using Nvivo. While this doesn't offer the quantifiable or statistical estimates of impact they are rigorous methods that enable us to delve much deeper into the causality, mechanism, and side effects or hidden impacts that the quantitative analysis is unable to do, adding a significant level of detail and nuance that is often not captured by quantitative research.⁶⁵ In this particular context, it helps illuminate the factors which underlie financial behaviour, the attitudes which shape that behaviour, and the day-to day issues which people face in managing their finances. These in-depth insights can productively be used alongside the quantitative elements of the project to help explain the impact of different interventions.

#	Partner	Intervention type	Sample size	Data collection dates
1	NCCU	Online	9	Before: 10-11/2017 After interviews: 11-12/2017 Focus group: January 2018
2		Workshop	10	Before: 30/10/17 After interviews: from 20/11/17 Focus group: January 2018
3	Coventry University College	Online	10	Before: 10-11/2017 After interviews: 11-12/2017 Focus group: January 2018
4		Workshop	11	Before: 27/9/17 After interviews: from 16/10/17 Focus group: January 2018

Ethics

We took ethical concerns very seriously, with every stage of the research receiving full ethical approval from Coventry University. A Data Management Plan was implemented to ensure all personal data was secure and remained confidential.

Informed consent was obtained both at the recruitment stage and before each interview. This process involved describing the nature of our research and how the data would be used. Each participant also received a research information sheet in which all of their rights were explained. Participants were given the right to withdraw from the research up to two weeks following the interview and informed that if they did so, their data would be permanently deleted from the research.

⁶⁵ Berg, 2004; Kaczynski et al. 2014.

To thank the participants for their time, we gave them shopping vouchers. Vouchers to the value of £45 were given to workshop participants, who also received a £25 voucher at the follow up interview. The cohorts completing the 'online-only' course were each given a £20 in voucher at their pre- and post-intervention interviews.

The interviews were led by professional and fully trained researchers with experience in gathering data involving sensitive issues. Pseudonyms and other measures have been used to ensure participant confidentiality.

Qualitative Research Process

The research process was framed using behaviour change theory (Darnton, 2008)⁶⁶, reflecting that we wished to assess the impact of different interventions on different groups. As such, we took a longitudinal approach, undertaking our main data collection over a period of four months.

A longitudinal sample of 40 participants who identified themselves as 'financially squeezed' was recruited from moderate to low income households. The sample was drawn from a local Credit Union and from a Higher Education College with a significant mature student population. A broad mix of participants in terms of age, gender, employment and family type was recruited. In both cases half the sample received the intervention through a facilitated workshop and the other half the online course alone. Both versions covered the same content and were identical to those used for the quantitative trials discussed above.

All participants had two interviews, one before and the other after the intervention. Each interview lasted between 20 minutes and one hour. Interviews were conducted by pairs of researchers to ensure research quality and protect the wellbeing of all concerned. The interview prior to the workshops was conducted on the same day as the workshop, which allowed us to capture the attitudes and behaviours of the participants as close to the intervention as possible. At the workshop a link was shared to the online materials and participants were encouraged to work their way through these materials in their own time. Hard copies of the materials were also provided. In both versions the follow up interview was conducted several weeks later. Two people out of the 40 declined to participate in the follow-up interviews, leaving us with seventy-eight semi-structured interviews conducted with forty participants.

The workshops were approximately 3 hours long. The purpose was to introduce participants to the course and facilitate their engagement with it. A series of short teaching sessions, which were led by the project leader Will Brambley, was combined with break out activities and videos facilitated by researchers from Coventry University and The Open University. The activities involved thinking about personal financial goals and small changes participants could make immediately after the workshop to improve their finances. Participants were seated in table groups of four, each with a researcher assigned to it. The researchers seated at the tables were able to facilitate the group work, answer questions about the online materials and resolve any issues the participants had in navigating the course. This

⁶⁶ See also Michie and West, 2011.

mix of delivery methods recognised that people learn in different ways, ensured the workshop was interactive and helped to keep the participants engaged by breaking up the teaching component. The workshops allowed us to see whether the use of group work, interactive learning and social contact with peers help or hinder the provision of money advice.

The interviews with participants followed a semi-structured format, meaning that we used a checklist of issues to guide the conversation. Such a format is less restrictive than a questionnaire-based interview, as it allows issues to be probed in greater depth. The following topics were explored:

1. Confidence in managing their money and their role in managing household finances.
2. Financial behaviour, including budgeting, savings, and financial resilience.
3. Changes in their financial priorities and behavioural intentions.
4. Attitudes towards money and ways in which these attitudes changed.
5. Impressions of the course online only or workshop-supported course.
6. Impact on their potential and perceived financial wellbeing.

We designed the semi-structured interviews using a checklist informed by behaviour change theory. Theories of change allow insights into how behaviours can change over time (Darnton, 2008). Such theory-based interventions are widely considered to “facilitate an understanding of what works and thus are a basis for developing better theory” and practices “across different contexts and populations” (Michie et al., 2008). Topics 1-4 and 6 covered areas of financial management that we could explore and compare before and after the intervention. This meant that we were able to assess both the level of behaviour change prompted by the interventions, and to understand the impact of the course on money management behaviours, habits and attitudes.

To follow up and ascertain the longer-term impacts of the interventions we undertook two two-hour focus groups in February 2018, each consisting of ten participants from the Credit Union and Higher Education College. We wanted to understand the difference in the effectiveness of delivering the intervention in the ‘with workshop’ and ‘online only’ modes. The Coventry University research team briefed an external research consultancy on the topics of interest and then worked with the consultancy to develop the focus group schedule. The focus groups were facilitated by the external research consultancy to ensure an independent, impartial perspective of the intervention’s impact was achieved.

We also conducted a further two focus groups in May 2018, to help answer questions raised by the earlier research and consolidate our findings about the types of financial education people would find valuable, identify when the ‘teachable moments’ might be, explore through what channels and with what content that delivery should be; and to understand what further barriers there might be to access financial interventions. Each group was made up of ten participants on a low to moderate income, who identified themselves as ‘financially squeezed’ and who had not previously participated in the research.

Analytical techniques

The interviews generated some twenty-six hours of recordings. Each interview was digitally recorded and transcribed in full. We scrutinised our data using thematic ‘framework’ analysis (Ritchie *et al.*, 2013) aided by Nvivo computer software. This approach enabled us to achieve an accurate reflection of how participants managed their personal finances and the impact of the intervention on their lives. In order to ensure a rigorous thematic analysis, it was important to have a large number of interviews so that we can be confident that the identified themes are prevalent across a range of transcripts.

The data analysis took over two months and followed a systematic and iterative process. This process ensured the data set was interrogated as thoroughly as possible and that our conclusions were logical, organised, evidence driven, and an accurate reflection of the data. The first stage took place at a coding workshop involving all members of the research team. After reading through a selection of transcripts, the researchers identified and discussed themes from the data that were relevant to the aims of the study. These themes were treated as ‘parent codes’ in the second stage of the process, during which three researchers used Nvivo software to highlight sections of the transcripts that corresponded to these codes. The term ‘parent code’ is used to describe broad and overarching themes emerging from the data, while themes that are derivative of these terms are labelled child codes (Bryman, 2015).

During this second stage, the researchers were able to develop new themes as they delved more deeply into the transcripts. These new themes resulted either in the creation of new parent codes, or in the inclusion of child codes within the existing parent codes. Researchers were able to identify codes that stood alone and related to key concerns of the “What Works?” project. The systematic data analysis process is illustrated in Figure A1. In total, the research generated fifty-seven codes, details of which are provided in the results section.

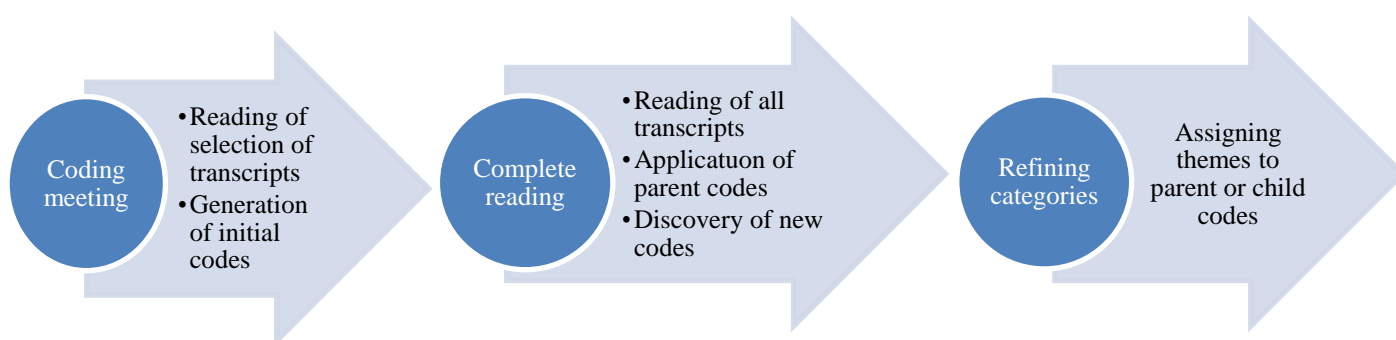


Figure A1: The data analysis process.

Appendix 4: Comparing the Impact of Different Forms of the Intervention

Expanded from 4.4.3: Why did the results differ between trials, and what role did the format of the tool play in this?

A5.1 Introduction

As discussed in the methodology section there are four forms of the intervention used across the six trials we ran. These present the same content, but differ in the format of delivery and the method of engagement:

- Online, invited via email
- Paper, invited via letter
- Workshop, recruited through invitation and in some cases intensive methods
- In-person through Community Connectors engaging people in their communities.

light touch, remote versions of the intervention (online and paper) with the two more-intensive, in-person forms (the workshops and through the Community Connectors). Our hypothesis was that the in-person interventions would be more effective, being something we might consider a stronger experience than reading the material and watching the videos, analogous to the difference between attending a concert and listening to a CD. Moreover, humans are social creatures who tend to relate better to people than to inanimate materials, and by engaging with another person there is additional motivation to go through the full intervention whereas online it may be easy to give up part way through.

We find some indication of this in the quantitative trials, in particular comparing the Community Connectors and Quids In! results. However, this it is not conclusive, and the more in-depth qualitative analysis shows striking similarity between the participants' response to both. What does seem clear is that both versions had an impact, and any in-person methods do not appear to be as markedly more effective as we might have expected.

Our results give no consistent pattern for differences between other forms of the intervention. Initial analysis of the NCCU trial suggested the paper version may have been more effective than the online one, however this was not a robust finding, and more in-depth analysis on a longer time-series of NCCU data has contradicted this.

A5.2 Light touch (online/paper) vs. in-person (workshop/community)

Comparing the results from the ***NCCU light touch*** trial and the ***Swan workshop*** trial gives some suggestion that the workshop has a bigger effect on average savings balance than the online tool. However, this is not a robust comparison, as the two trials measure different treatment effects, requiring us to adjust the NCCU treatment effect to account for the proportion of those in the treatment group who actually used the intervention. We estimate this figure in Appendix 6 below (30%), and if this is accurate it implies the Swan workshop had roughly double the effect on the average

savings of those who attended compared to those who engaged with the NCCU light touch intervention (£138.6 vs. £72.43, Swan vs. NCCU respectively), but this is not a reliable figure and is based on various assumptions. Moreover, the engagement rate purely considers whether participants clicked the link in the email to go to the intervention website, not whether they actively engaged with any aspect of it, whereas the workshop participants went through the full intervention during the three-hour workshop. If only half of those who went to the website actively engaged, it would suggest the treatment effect for those who fully engage is roughly the same for both the online and workshop versions.

Comparing the **CUC trial**, which used the online version, with the **Swan workshop survey**, offers some suggestion that the Swan workshop may have had a bigger positive impact on budgeting and spending than the online CUC intervention, though interestingly not on self-reported saving. However, the sample size of both trials is too small to show a clear pattern of significance across variables.

The **Quids In!** (light touch) and **Community Connectors** (in person) trials use different surveys, though both have comparable questions relating to the proportion of participants in the treatment group who improved their regular saving, budgeting, or avoiding running out of money, compared to their control group. Quids In! shows no significant improvement in any of the three, but the Community Connectors trial shows robust improvements in the proportion who budget (0.281, p: 0.003) and avoid running out of money before the end of the month (0.177, p:0.050). Both trials have samples sizes of 121, giving more confident results than the CUC and Swan workshop surveys, and while far from definitive these results support our hypothesis that more-intensive, in-person treatments appear to have a greater impact on participants' behaviour.

The **qualitative analysis** looked into how the interview and focus group responses differed between the online and workshop cohorts in some depth. When discussing the impacts there was no clear trends in the different responses between the two groups: participants from both groups reported similar changes in budgeting, spending, confidence, and wider changes. A greater proportion of participants in the workshop group (75%) reported having saved more for Christmas 2018 versus Christmas 2017 compared to the online one (64%), but the average level of attribution of the course towards increased saving in general was almost identical between the two.

However, interestingly those who attended the workshop unanimously said the course materials on their own (either online or paper) would not have been as helpful as attending the workshop. One participant suggested they would have "*shoved it in a pile somewhere and forgotten about it*", while others commented on the importance of the expertise and interaction they obtained via the workshop. The workshop participants were clear in their view that future courses should always include a pre-course workshop. The online focus group provided more mixed views on the potential benefit attending a pre-course workshop would have had for them, though felt that some people would benefit from having a discussion prior to completing the course in order to talk it through and build their understanding.

Here are two personal views from participants, one each from the NCCU and CUC cohorts, to help illustrate the potential role of the workshop:

Amy is a young adult who lives with her partner and their two children. Money does cause arguments at home and Amy felt that budgeting would mean that her partner would have to shoulder responsibility for his saving. She found the workshop to be a good space to think about 'prioritising' the things that she 'actually wants' by listening to 'everyone else's goals.' Amy did find the online materials and hard copy were useful to show to her partner back at home. She found both the workshop and the online to be useful as they served different purposes for her.

Claire is a young adult who lives in a house share with other students and is studying at university. She found the workshop to be 'especially useful' due to the activities that the participants did in groups. She did like the online videos which gave advice. Claire said that she 'would definitely re-watch the videos again. Claire decided that she found the workshop to be much more 'engaging' than the online materials, because the workshop 'everyone' was so enthusiastic, while 'you might skim and not take away the actual information' from just the online course. She found that the workshop helped her to assess her spending, which has helped her saving to 'become a lot better'

Appendix 5: Analysis on Engagement

Expanded from 4.4.4: How well did the intervention engage participants?

A6.1 Introduction

Our previous Managing My Money course is one of the largest optional financial education courses with over 300,000 registered learners. Previous research we conducted on who chooses to take it found the course, in common with most financial education initiatives, appeals primarily to those with a higher-than-average level of education and interest in finance, who tend to be more comfortable and have higher financial capability. This is unsurprising given that actively looking for and signing up to take any course implies some level of interest in the topic, and that we would expect those with a stronger interest in finance to have engaged more with their financial products and made better financial decisions. This also supports the conventional wisdom that more intensive, pro-active, and hence expensive, engagement methods and financial capability initiatives are needed to reach those with lower levels of financial capability – the hard to reach groups who would most benefit from it – which characterises many of the JAMs. Given the expense of such initiatives they tend to only be suited to helping with acute financial difficulty, rather than being feasible interventions to offer to the general population who are just about managing to help prevent them falling into difficulty.

We split out the pro-active aspect of this from the intensive and expensive elements to test whether a cheap, scalable initiative could reach the JAMs using the ‘light touch’ but pro-active engagement methods mentioned above. Behavioural research shows the powers of making an action easy for people, and suggests many more people will engage with something that’s sent to them compared with something they have to actively seek out. Our trials used a range of light-touch and slightly more intensive engagement methods as mentioned above, with the aim of doing precisely this. Did this engagement work? It appears to have had some success in some of the trials, the data is very messy and this is far from conclusive.

A6.2 What proportion of invited participants used the tool?

We do not have data that allows us to calculate this precisely. Technical issues with the way OpenLearn Create measures the number of users and the links they clicked to get to the intervention prevented us from calculating a definitive figure for the number of engaged participants in each trial.⁶⁷ We can measure how many visits our online tool received, but complications with IP addresses and other technical barriers make it difficult to identify how many people this number implies and which trial they were part of. The online tool received 4231 visits. Some measures of return visits imply that most of these are likely to be unique users, though tighter

⁶⁷ Issues such as: people going to the website from multiple devices can artificially inflate the number of unique users, whereas multiple users accessing the website from the same network (in particular Coventry University College) can artificially reduce it. Moreover, while we can see aspects of how users arrived at the website that enable us to exclude the few people who found it not being part of any of the formal trials, we cannot see the specific links each user clicked necessary to be able to see which trial each came from.

measures suggest we had 937 active visitors, which we believe is a more accurate measure.

This section uses three methods to attempt to give a rough indication of the engagement rate. These methods are not robust, as they rely on comparisons between small samples that have self-selected into their respective groups and use figures we have had to interpret using assumptions, so the results here should not be taken as strong evidence of anything. We present them purely to give some sort of indication of what the engagement rate might be, as our results and those from other What Works Fund projects suggest engagement appears to be one of the key issues in assessing financial capability interventions.

Our survey-based trials asked treatment group participants if they had engaged with the tool, with most of those responding to the follow-up survey stating they had, but we do not have any data on those who didn't respond to the survey. Persuading people to respond to surveys is a difficult task, with reports suggesting it has become much harder recently as people are more sensitive about sharing their data and more able to filter out online requests for attention. With active chasing for responses among the *Quids In!* treatment group we managed to get almost 50% of those we sent the tool to respond to the follow-up survey, suggesting an engagement rate of at least 40% (40% would imply no-one who didn't respond to the follow-up survey engaged with the tool, so the actual engagement rate will be higher than this). However, as the tool was only sent to those who responded to the initial quiz in the magazine and sent us their answers this represents a 'warm' contact to a group that has already demonstrated their willingness to engage. This is not a fair estimate of engagement among the population as a whole. The survey results do not suggest a significant difference in the response rate between those receiving the paper version and a link to the online version, however as these groups have self-selected to receive that version and we do not have data on those who didn't respond to the survey it is not strong enough evidence to conclude that the response rate is necessarily similar.

When assessing engagement, we are primarily interested in the proportion of participants that received a light-touch, 'cold' invitation who used the tool, not those who received it after submitting a survey, as this best matches how the intervention might be rolled out in practice. We can get a rough estimate of this engagement rate by taking our estimate of unique users and excluding an estimate of how many accessed the tool following a 'warm' contact (after having responded to a survey), then comparing this to the number of light-touch invitations sent. This is a very uncertain calculation as it relies on a number of assumptions and estimates, so while it is our best estimate of the engagement rate it should be considered only a rough indication.

Using our conservative estimate of the number of unique users (937) which is the most valid estimate albeit a lower bound of the true figure, and our survey data, we estimate 450-650 of our unique users came from the three light-touch trials – NCCU, CDCU, and CUC. In total we sent out around 2200 email invitations and 1000 letters with paper copies of the tool from these three trials. While it is possible for some of those who received the letter to use the online tool, we do not expect that any significant number did so, as they have the paper version included and would need

to type in a URL in order to do so. Assuming the vast majority of online users came from those sent emails suggests a response rate of 20-30% to those email invitations, though as mentioned this is very rough estimate. Sadly we cannot get data how many participants that received the paper version used it.

Looking at the timing of user visits allows us to refine this a little. It suggests the response rate to the CUC emails, which were sent out in January, was nearer to 10%. Taking this into account the response rate to credit union trials may be 30-50%. This seems a relatively high figure, almost remarkably so as very few commercial advertising emails achieve this level of click-through, though perhaps the link between the credit union's mission and tool or the nature of credit union members is such that the invitation resonated more with them than commercial marketing does. It is important to remember this estimates the proportion of participants who clicked to access the tool, it does not imply they all went through the material or used the tool.

Another way to consider whether this is a reasonable estimate of the engagement rate is to compare the impact of the tool between the encouragement trials (those that measure the ITT that includes the engagement rate) and the structured trials (that measure the ATT for those we know have engaged with the tool). The only directly-comparable quantitative data we have covering both types of trial are savings balances from the NCCU online trial and the Swan workshop trial. We compared these in section 4.2 and appendix 4 above, finding that a response rate of around 20% in the NCCU trial would equate their treatment effects. The qualitative analysis does not find markedly different responses from participants who used the workshop and online versions, though survey responses from the Swan workshop participants and the CUC online treatment group suggest the workshop may have been more impactful. This suggests 20% as a lower bound of the engagement rate in the NCCU online trial, and that the true engagement rate is unlikely to be vastly higher than this. This is consistent with the 30-50% engagement rate estimated above for the NCCU online trial, especially the lower end of this. However, it must be stressed that this analysis is far from robust, relying on a small sample of workshop participants and strong assumptions that this cohort is similar to those who received the online tool, so should be taken as a supporting indication of the response rate at best.

Overall this analysis gives a rough indication that somewhere around 20% of those who received an 'cold' email invitation to engage with our intervention may have done so, though this appears to be much lower for college students receiving the invitation from their college (around 10%) compared to credit unions members being invited by their credit union (around 30%). Engagement appears higher among those who have opted in to receive the intervention by submitting a pre-intervention survey (above 40%). However, we stress these calculations are only rough indications at best, based on small samples and requiring strong assumptions to interpret. Moreover, these rough estimates only apply to the online version of the intervention with email invitation to participate, as while our surveys do not provide evidence of marked differences in engagement for those receiving the paper version through the post, we do not have the data to provide any reasonable calculation for the paper version. Having emerged as a key topic, it would be beneficial to conduct

additional research to test engagement methods explicitly, either as standalone trials or in future trials testing the impact of financial capability interventions.

A6.3 Why were participants reluctant to engage?

As well as challenges getting participants to notice and respond to any light touch intervention, getting people to respond to surveys, attend workshops, or follow-up with a Community Connector, proved a difficult challenge. Apathy offers one obvious reason, as we know finance is not a topic most people find interesting. However, the difficulties many Community Connectors' experienced in persuading people to have a follow-up chat to see if they could provide more help suggest, and the way people responded, suggest trust, privacy, and shame may have played a role.

The key theme of financial capability week in November 2017 was of money being the last taboo topic in society, that people are unwilling to talk about their finances. Despite offering relatively generous amounts of Amazon vouchers for participation in surveys and workshops we similarly struggled to entice people to engage or share their views – with the notable exception of the Swan workshop that attracted the number we hoped for with relative ease. We overcame some of the issues this could have caused through more intensive recruitment methods, though it has caused smaller-than-hoped-for sample sizes in some of the survey-based trials. This survey fatigue appears to be a growing trend, especially in surveys relating to finance, suggesting an increased use of objective data and reduced reliance on surveys would benefit future research, at least to the extent permitted by GDPR.⁶⁸

However even using a variety of intensive methods, many Community Connectors struggled to persuade people to engage with them, especially when it came to following up with people they had helped. Connectors reported that while some simply didn't see the need, others felt judged or embarrassed if their situation or habits had not improved.

Previous research suggests surveys around sensitive topics, such as sexual behaviour, create issues of privacy, trust, and shame, which can affect both response rates to and cause those who do respond to give biased answers.⁶⁹ When considering why some Connectors were more successful at engaging participants, there seemed to be a fine balance between being a close-enough and respected-enough figure to potential users to reach a level of trust where they feel comfortable opening up about their financial issues, and being removed enough that sharing personal information or issues they might find embarrassing doesn't feel like an invasion of their privacy. The analogy of a GP as the ideal midpoint was brought up by multiple Connectors and participants, being figures respected and known for their knowledge while having a clear impartiality and non—judgmental role. Some Connectors appeared to do better at engaging potential participants through an existing position or role that makes them known in the community, or other factor which makes those they're trying to reach see them as trustworthy without being a close friend.

⁶⁸ Porter, S. R., Whitcomb, M. E., & Weitzer, W. H., "Multiple Surveys of Students and Survey Fatigue." *New Directions for Institutional Research* 121 (2004)

⁶⁹ E.g. Kelly, et. al., op. cit.; Dunne, et. al., op. cit.; Fenton, et. al., op. cit.

The experience of Community Connectors suggests these issues of shame, privacy and trust, may apply to financial situations and behaviour. However, this is not an area where we have been able to conduct the in-depth analysis required to consider how and to what extent. This is an important topic for future research, both in considering how to better provide support with financial issues to those who need it and to what extent these issues may bias common survey-based data collection methods.