What can **behavioural science** tell us about the **financial decisions of women?**

Evidence from a systematic review of behavioural interventions

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Opinions stated in this paper are those of the authors and do not necessarily reflect the views of the International Development Research Centre (IDRC).

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About the authors

The authors of this study are expert affiliates of the Centre for Financial Regulation and Inclusion (Cenfri), a non-profit think tank based in Cape Town which supports financial sector development and financial inclusion. Herman Smit, Technical Director at Cenfri, is a behavioural economist. His research work in Africa, Latin America, and East Asia is predominantly focused on the application of behavioural science, data science, and technology to the delivery of financial services to low-income people. Rinelle Chetty is a behavioural economist and research analyst at Cenfri. Her research has focused primarily on the risk-trust confound and the application of behavioural science to financial services. Engagement Manager Louise De Villiers is a survey specialist with research interests in feminism, inequality, social justice, and poverty reduction. Research Associate Brittany Dudar served in Cenfri's Client Insights team, investigating behavioural interventions that are effective in improving women's financial access and usage.

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Foreword

The proliferation of mobile banking and other financial sector innovations has accelerated the pace of financial inclusion worldwide. Nowhere is this more evident than in sub-Saharan Africa, which pioneered the use of mobile banking. According to the 2014 Global Findex, 12% of adults in the region use mobile money, compared to just 2% worldwide. This innovation has been instrumental in reaching those excluded from traditional banking services, particularly women. Globally, the financial inclusion gender gap remained at seven points between 2011 and 2014, and was even higher in developing economies, at 9%. Much remains to be done to close prevailing gender gaps. Many governments and private sector actors are intensifying efforts to foster financial inclusion.

Access to financial products and services is believed to be a key enabler – enhancing women's economic empowerment and allowing them to better manage their lives. While it is widely assumed that this access will have a meaningful impact on people's lives, social and cultural constraints conspire to prevent many women from fully utilizing financial products and services. The result can be low uptake or negligible changes in women's economic empowerment and labour market decisions.

Evidence on the impacts of financial inclusion is scarce, but the need for it has become critical as governments, private sector actors, and donor agencies seek to enhance the developmental impact across sectors – especially for groups such as marginalized women, who lack many services in addition to suffering financial exclusion. As efforts to close gender gaps intensify, important questions emerge. Are the financial tools available to women helping them enhance their productivity and income, and more importantly, how can potential gains be realized and enhanced? It is increasingly recognized that ensuring the impact of financial inclusion on women's livelihoods cannot be done without addressing multiple gender inequalities embedded in the entrepreneurial eco-system – including socio-cultural norms and the gendered division of labour. Another key question is whether financial inclusion is transformative by itself or needs to be coupled with other interventions to have a positive impact on women's livelihoods.

This scoping paper makes an important contribution to our understanding of how gender intersects with financial inclusion. It is one of a series commissioned by the International Development Research Centre (IDRC) to shed light on the above questions. Their insights point to potential new areas of research support that will build an evidence base for practical, policy-relevant solutions.

Martha Melesse and Jemimah Njuki
Senior Program Specialists, International Development Research Centre

Abstract

Women are significantly less likely to use formal banking services than men, due to a range of barriers to access and use. A lack of gender-disaggregated data makes it difficult to identify specific ways in which women may interact with financial products and services differently than men. One area that is little understood is what influences women's decisions around enrolment in, or use of, financial products. A growing number of studies in the field of behavioural science are examining factors that influence financial decisions. This paper reports on the effectiveness of various behavioural interventions that could reasonably be applied by financial services providers. It first examines the evidence on interventions that influence savings, credit, payments and insurance decisions by all adults. It then focuses specifically on interventions that show promise to improve service delivery for women.

Key messages

Findings on behaviour interventions that may influence women's decisions are presented in four broad categories:

Client choice architecture

Opt-in/opt-out default interventions are comparatively more effective at influencing women's longer-term savings decisions than those of men.

Commitment features

- Women who tend more towards short term consumption are more likely to open a commitment savings account, which restricts their access to their savings.
- Women are more likely to enrol in a deposit collection service than men, leading to higher savings accumulation for women.
- Soft commitment features, such as a safe space to save, are effective in increasing women's savings.
- Men and women differ in the amount they would remit when they can control how the funds are used by the recipient.
- Grace periods for loan repayments are associated with higher default rates for women.

Client communication

- Women are strongly influenced by their peers when selecting financial products.
- Women are at greater risk of default when their microfinance lending group consists of only women.
- Female students are less likely to take up student loans than their male counterparts when presented with social norms information.
- In some instances, advertising content is less effective in influencing women's financial decisions than those of men.

Pricing and financial benefits

- Discounts and incentives are effective in increasing uptake and usage of bank accounts.
- Women's financial decisions are influenced more by perceived risk than those of men.

1. Introduction

"It is important to understand what influences women's decisions to enrol or use financial products."

The 2014 Global Findex Report identified that in developing economies, women are significantly less likely to use formal banking services than men, with 59% of men and 50% of women having bank accounts (World Bank, 2014). This gap is the result of many barriers that women face in accessing formal financial services, such as the lack of collateral, small and inconsistent income levels, lower levels of financial literacy, gender-role constraints and household bargaining dynamics. The gap is also attributed to the significant lack of gender-disaggregated data available, which makes it difficult to identify specific ways in which women may interact with financial products and services differently than men. This lack of available data hampers the development of tailored financial inclusion interventions that would address financial needs and preferences.

"One way to bridge the gap in financial inclusion is to understand how women interact with financial services providers and their products."

One way to bridge the gap in financial inclusion is to understand how women interact with financial services providers and their products. It is important to understand what influences women's decisions to enrol or use financial products. There is a growing number of studies in the field of behavioural science that examine factors that influence financial decisions. Despite growing interest from the financial sector in using behavioural interventions to improve their service offering, a gap remains between the academic literature and practice. This paper seeks to address this divide by reporting on the effectiveness of behavioural interventions that could reasonably be applied by financial services providers. We do this for savings, credit, payments and insurance decisions by all adults. We then turn our attention specifically to interventions that show promise to improve service delivery for women.

The remainder of this paper is divided into four sections:

- **Overview of research methodology:** A description of the systematic review and the criteria used to identify studies relevant for understanding the impact on women.

- **Overall results from the systematic review:** We present the descriptive results from the systematic review, followed by the framework we developed for organising behavioural interventions into areas that mirror the product design and delivery functions within a typical financial services provider.

- **Results pertaining to women:** We present results from the systematic review that were significant for women, and we discuss what the various impacts were. We discuss the results within the framework developed from the broader systematic review.

- **Study limitations and conclusion remarks:** We conclude by reflecting on the limitations of this study and the evidence identified in this review and where future research may particularly add value.

2. Methodology

"The study draws on experiments reporting on the effectiveness of behavioural interventions on the financial decisions of individuals."

A systematic review was conducted to identify and select the papers included in this study (Smit, H. 2017)[1]. The systematic review applied the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRIMSA) approach. Below, we outline the study characteristics considered, including population group(s) of interest, intervention types, outcomes of interest and study design, electronic search strategy used and the specific focus on women.

Study characteristics. The study draws on experiments reporting on the effectiveness of behaviourial interventions on the financial decision of individuals. The search criteria applied no age, gender or nationality restrictions to participants of studies.

For the purposes of this study, we define a behavioural intervention as an explicit action or set of actions (a process) undertaken with the objective of influencing the behaviour (equivalent in this case to financial decisions) of financial services' customers. We sought to identify behavioural interventions that financial services providers can reasonably implement as part of their typical interactions with existing or potential customers. Through a review of the work of Gollwitzer (1999), Sunstein and Thaler (2008) and Dolan et al. (2012), we identified interventions that have successfully changed behaviour. We only considered interventions that preserve the autonomy of the decision-maker (Sunstein, C. 2015) to make an alternative financial decision. For the purposes of this review, we included interventions that made use of financial incentives and excluded financial education interventions.

"For the purposes of this review, we included interventions that made use of financial incentives and excluded financial education interventions."

Regrettably, only English language reports published between 1980 and 2017 were considered. This is due to the authors' limited knowledge of languages other than English. Both published research papers and unpublished literature (commonly referred to as grey literature) were considered.

Electronic search strategy. To allow us the ability to identify both published and unpublished literature, with the explicit objective of managing publication bias, we made use of Google Scholar. Citations from the included and excluded papers were considered to identify additional research. Search criteria used are reported in the annex.

Population sub-group: women. To analyse the effects of the behavioural interventions on gender, we selected studies that either disaggregated their findings by gender or used gender as an explanatory variable in their analysis. Search criteria for these studies included *having a significant relationship between the uptake or usage of a financial service or product* and *being female*.

Randomised control trials (RCTs), lab and field experiments. The systematic review only considered randomized controlled experiments or trails. Limiting the review to these research approaches allowed us to isolate the causal relationships between behavioural interventions and financial decisions. The authors, however, acknowledge the limitation of this approach (as outlined in section 5) and the rich body of insights that other research approaches bring to our understanding of financial decisions.

1 This systematic review was first reported by the author, Herman Smit, in completion of a Masters thesis at London School of Economics. The paper was entitled "Influencing the financial decision of individuals: A systematic review of behaviour(ly informed) interventions" and was submitted for final review in November 2017.

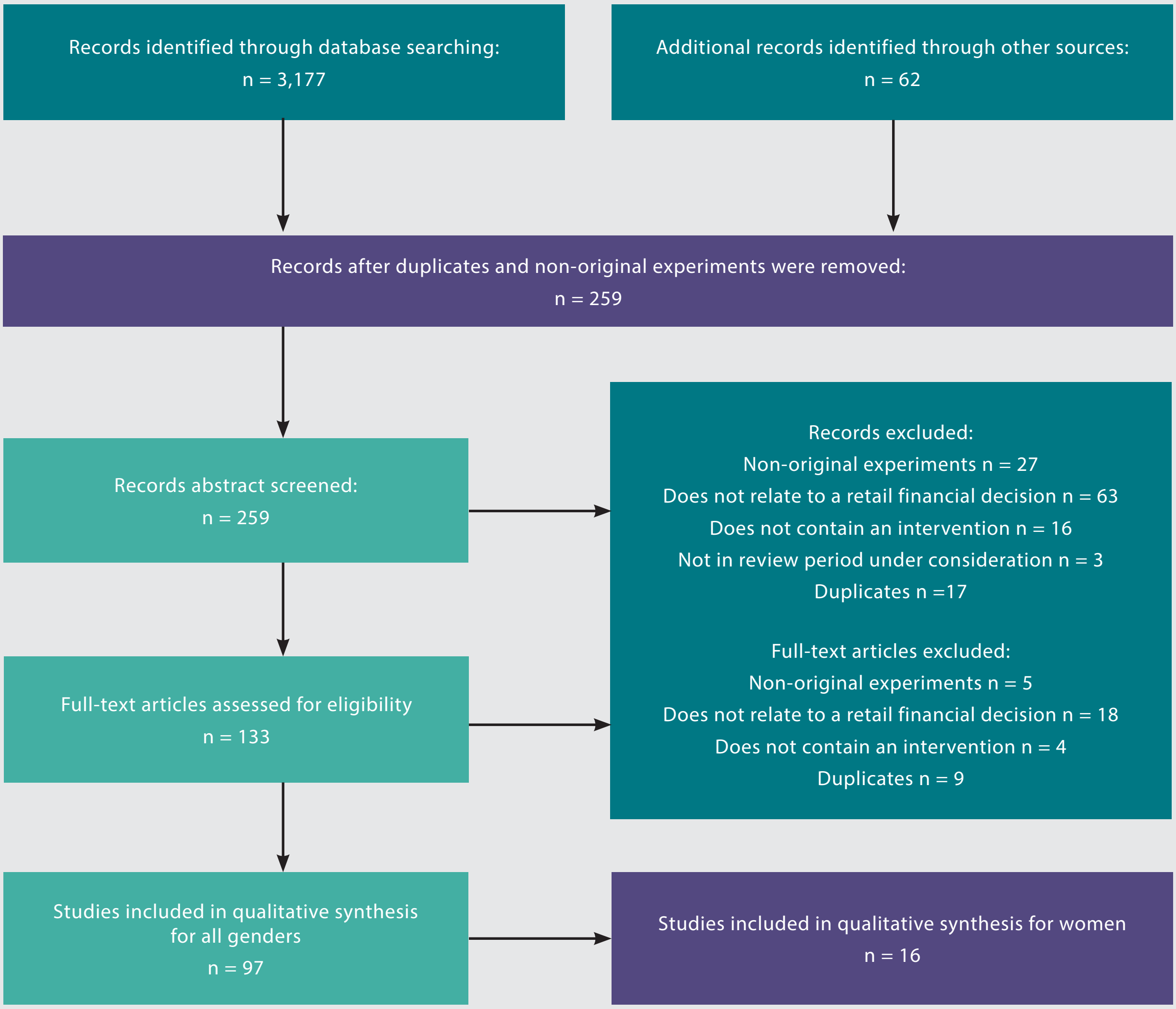
3. Results from the systematic review

"At least 186 different authors, from a number of disciplines and geographies, have contributed to this research question by conducting 124 experiments captured in 97 papers."

3.1 Summary of systematic review results

The systematic review identified 124 experiments within 97 studies that measured the relationship between a behavioural intervention and a retail financial decision. Of these, 16 studies reported the relationship between a behavioural intervention and the financial decisions of women. We will reflect on the results of the systematic review as they relate to men and women in this section before reflecting on how the results related specifically to women in the qualitative analysis in Section 4. **Figure 1** below reports the results of the systematic review, using the search terms reported in Appendix B and screening and selection strategy as reporting in Section 2.

Figure 1: Search and exclusion results



Source: *Adapted from Smit, H. 2017*

Table 1: *Total number of experiments by take-up or usage and product class*

Product class	Total number of experiments	Take-up	Usage
Savings	**74**	**26**	**64**
Credit	**41**	**14**	**36**
Payments	**9**	**2**	**8**
Insurance	**5**	**5**	**2**

Source: *Author's own.*
Note: Rows and columns do not add up to totals, as some studies have both take-up and usage, or multiple product classes.

The systemic review revealed that at least 186 different authors, from a number of disciplines and geographies, have contributed to this research question by conducting 124 experiments captured in 97 papers. The evidence has been drawn primarily from field experiments (77% of all experiments identified) and lab experiments (19%) conducted in 33 countries[2].

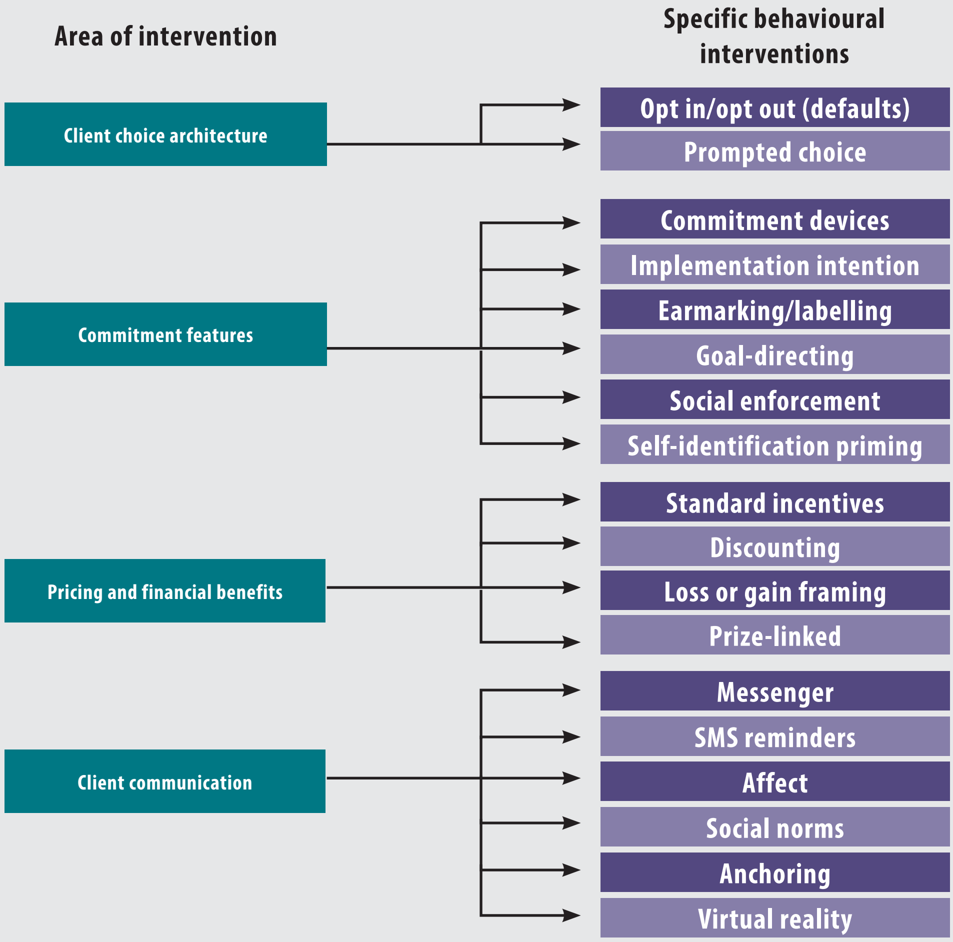
As shown in **Table 1** above, the review identified evidence on all four of the retail financial service product class categories, namely payments, credit, savings, and insurance. The most frequently tested were savings products, accounting for 60% of all experiments, followed by credit – which accounts for 33% of experiments. The relationships between a behavioural intervention and 11 unique financial decisions were tested. Financial decisions related to the *use* of a financial service were tested more than twice as many times as financial decisions related to the *enrolment* or take-up of financial products. Enrolment or take-up relates to the decision to sign up for a given financial service (such as a bank account, loan, or pension), while usage decisions relate to how, after enrolment, clients decide to interact with these products (e.g., the number of deposits, size of monthly loan repayments, or size of monthly pension contributions they decide to make).

3.2 Behavioural interventions framework

The behavioural interventions (as defined in Section 2) were tested across several typical promotion, sales and servicing interaction points between the financial services provider and customer (see **Figure 1**). Two[3] interventions tested in eight experiments amended the choice architecture of the financial service presented to the customer. Six[4] interventions tested in 47 experiments introduced commitment features during the sales process or as a product feature to explicitly assist the customer to commit to a future act, decision or action. Four interventions[5] tested in 39 experiments augmented product pricing or financial benefits to influence customer decision-making. Six[6] interventions tested in 45 experiments augmented components of the communication with the customer.

2 A full list of the countries and their total number of appearances in the database can be found in the Appendix.
3 These interventions include (1) Opt-in/opt-out default choices and (2) prompted choice
4 These interventions include (1) Commitment devices, (2) Implementation intention, (3) Labelling/earmarking, (4) Goal-directed, (5) Social enforcement & (6) Self-identification priming.
5 These interventions include (1) Standard incentives, (2) Discounting, (3) Loss or gain framing and (4) Prize-linked.
6 These interventions include (1) Messenger, (2) SMS reminders, (3) Affect, (4) Social norms and (5) Anchoring

__Figure 2:__ Intervention areas and types of interventions included in each



***Source:** Smit, H. (2017)*

The behavioural interventions identified during the full review (i.e. interventions tested on both men and women) are elaborated on in the remainder of Section 3. The effectiveness of these interventions as they relate specifically to women is discussed in Section 4.

Client Choice Architecture

Client Choice Architecture comprises deliberate changes in how choices are presented to prospective customers. This intervention area houses two behavioural intervention types: opt-in/opt-out default choices or prompted choice.

Opt-in/opt-out default choices typically pre-select a specific decision or a series of decisions unless the customer explicitly selects an alternative or chooses to "opt out". Atkinson (2013) studied the effects of pre-selecting a savings contribution equal to 10% of a client's loan payment amount in Gautemala. A control group was offered the chance to open a basic savings account at the time of loan disbursement and could freely contribute savings. The 10% default savings group accumulated twice as much savings as the control group.

Prompted choice, on the other hand, prompts the customer to make an active decision. A study in the United States required participants to adjust spinner controls, which were up-and-down arrow buttons, to physically input the amount that they would like to contribute towards their pension savings (Hulsey, 2012). This active consideration of the contribution rate led to higher savings.

Commitment features

The literature typically distinguishes between **commitment devices** that utilise hard or soft commitments. Hard commitments are those that an individual cannot easily reverse. Examples include storing one's money away without access to a key, or having a savings account that does not allow withdrawals. Soft commitments, on the other hand, are less stringent and allow a person more flexibility. These can include making a verbal promise, indicating intentions to someone, or earmarking one's money for a particular purpose or goal (De Arcangelis, 2015).

In addition to these commitment devices, the commitment features category includes the following interventions: implementation intention, goal directed, earmarking/labelling, social enforcement, and self-identification priming. Each is defined below.

A commitment feature focused on **implementation intention** is one where an individual indicates the behaviour they *intend* to perform to achieve a specific goal, and the context in which they will achieve it (Sheeran et al., 2005). For example, asking the individual what their goal is, how they intend to meet this goal, or when they intend to make a payment towards this goal helps to clarify their intentions and increases their likelihood of achieving the goal. A survey in the United States asked participants to specify when, how, how much and from what source of income they would deposit money into their savings account (Loibl & Scharff, 2010).

A **goal-directed** commitment feature is similar, in that it involves committing one's behaviour towards achieving a particular goal (Hershfield et al., 2011). Making a goal clear in one's mind makes it more salient and encourages one to act in a way that leads towards goal achievement. Several experiments conducted in India asked participants to think about a suitable strategy for saving for their children's education, household expenditure and retirement, among others (Soman and Zhao, 2012). Participants who were asked to think about one specific goal saved significantly more than those who were asked to think about multiple goals: savings increased 4.4-fold compared to savings by participants who were asked to think about multiple goals.

Earmarking/labelling is the act of mentally accounting or labelling different expenditures or savings for an intended purpose. For example, earmarking one's savings for a specific goal or expenditure acts as a soft commitment, which leads an individual to mentally differentiate between their usual savings and the earmarked savings. Typical labels for earmarking found in the systematic review include health expenditures and education (De Arcangelis et al., 2015; Dupas & Robinson, 2013). Contributing money into a "Health Pot – a savings pot earmarked for specific health expenditures – was found to be a highly effective vehicle for savings (Dupas & Robinson, 2013). The "Health Pot" increased health investments three-fold compared to the control group, which was simply encouraged to save for health purposes.

"Contributing money into a "Health Pot - a savings pot earmarked for specific health expenditures - was found to be a highly effective vehicle for savings."

Social enforcement is defined as peer influence from a third party. In an experiment conducted in South Africa, existing clients of a micro-lender were offered a USD12 bonus if they referred a friend who successfully repaid their loan on time (Karlan et al., 2012). This intervention reduced the risk of default by 10 percentage points and increased the likelihood of timely loan repayment by 2.5%.

Self-identification priming explicitly and uniquely links a customer to their financial decision, using their signature, biometrics or other identifiers. An example is a field experiment in Malawi where farmers applying for an agricultural loan were asked to provide their fingerprints as part of the application process (Giné, Goldberg & Yang, 2009). These treatment members were also provided with an explanation of how these fingerprints would be used to identify them. Fingerprints were not elicited from the control group. Overall, farmers who provided their fingerprints had significantly higher repayment rates than those who did not.

Pricing and financial benefits

Pricing and financial benefits interventions target the ways in which financial services providers can incentivise and encourage individuals to take up or use financial products. We know that individuals respond to incentives (Dolan et al., 2012). Interventions in this category include providing incentives to motivate participants to use or engage with these financial tools in ways they may not have otherwise or making some kind of adjustment to the pricing of the products or services in an effort to make them more accessible.

Standard incentives provide money to individuals to persuade them to take up or use a financial product. Such incentives primarily include lump-sum payments. For example, an experiment in India measured the effect of varying levels of incentive: high, medium and low, ranging from 25,000 rupees to 125,000 rupees (Cole, Sampson & Zia, 2011). This study found that households receiving the high-valued incentive were 9.2% more likely to open a bank account than those receiving the low-valued incentive, confirming that individuals are more motivated by bigger incentives.

A variation on this kind of incentive is the ***prize-linked intervention***. This uses standard incentives, either monetary or non-monetary, in conjunction with some form of a lottery mechanism to influence behaviour (Kearney et al., 2010). This intervention relies on the fact that many individuals inaccurately believe that they have a chance of winning the lottery, even though their chances are very low. In the United States, a lab experiment randomised the opportunity for participants to win up to USD1,000 with a risk of losing, compared to the control which provided individuals with a guaranteed incentive of USD100 (Atalay et al., 2013). The effect of the prize-linked treatment was a 12% increase in savings compared to the control. Since individuals are more optimistic about their chances of winning the lottery, this leads them to use their bank accounts more and to increase their overall savings.

Discounting reduces the offer price to the customer from a previously stated price. Examples include waiving an account opening fee or minimum balance requirements. This could also include providing insurance at reduced premium rates. This was done in India, where a 50% discount on weather-indexed insurance premium resulted in a 13% increase in the take-up of insurance (Ceballos, 2015).

Individuals are influenced more by losses than gains of the same amount (Dolan et al., 2012). ***Loss or gain frame*** interventions highlight either the gains or losses associated with the use of a financial services product. For example, an individual may choose to take risks for large gains or may decide to accept a sure loss (De Martino et al., 2006). Experiments that used this type of intervention typically presented the same information to participants with some receiving this information in loss/negative language and others in gain/positive language (Bertrand et al., 2005; Bertrand et al., 2010; Ganzach & Karsahi, 1995). These experiments usually measured the effect on individuals when they were told that they were losing out on something compared to acquiring something else. The effect of loss/gain language on the take-up of loans was generally found to be insignificant (Bertrand et al., 2005 and 2010). However, a study conducted in Israel found that communicating the benefits forgone when not using a credit card, as opposed to communicating the potential benefits of using a credit card, led to an increase in credit card usage by 24% (Ganzach & Karsahi, 1995).

Client communication

Client communication focuses on the different ways in which financial service providers can effectively communicate with clients and enhance the interaction between client and provider for the benefit of both parties. It looks at the influence on behaviour from framing the choice architecture or marketing products differently. The effectiveness of client communication is shaped by a number of factors, including: the messenger effect, reminders, affect, social norms and anchoring.

The messenger effect states that individuals are influenced by the person who communicates information to them, i.e. the source of that information (Dolan et al., 2012). The perceived authority of the messenger is especially important.

Reminders are alerts that prompt individuals to remember an act or decision. Since individuals are prone to behaviours such as forgetfulness or procrastination, receiving reminders could lead them to be more consistent and to follow through on savings deposits or payment decisions (Aker et al., 2016; Karlan, 2010; Kast et al., 2016; Rodríguez, 2016). The studies in the systematic review focused on simple text-message alerts that prompt individuals to remember an act or decision.

"The studies in the systematic review focused on simple text-message alerts that prompt individuals to remember an act or decision."

Affect pertains to one's emotional responses and the fact that our emotional reactions can shape the way we act, think and make decisions (Dolan et al., 2012). An experiment in South Africa encouraged participants to watch a soap opera featuring a storyline focused on financial management, avoiding debt traps and getting out of debt (Berg & Bilal, 2013). This study found a 9% increase in borrowing from a formal bank.

Social norms relate to the way in which other people act or behave. We are often influenced by what others do, and we seek to act in accordance with those around us. Students who were informed of the typical borrowing and repayment decisions of their peers were 2% less likely to take up a student loan than those students without this information (Darolia, 2016).

Anchoring occurs when individuals' decisions are based on an initial "anchor" or reference point. Individuals infer that the initial value (an absolute monetary value or percentage contribution level) communicated to them is the most appropriate, and they alter their behaviour towards that anchor (Dolan et al., 2012). Exploiting this bias toward reference points can allow financial services providers to subtly increase savings amounts or the amount put towards credit-card repayments (Colby, 2013; Hershfield, 2015). Anchors can also be utilised to encourage individuals to pay off their credit cards in a shorter period and to pay it off in full (Hershfield, 2015; Salisbury, 2014).

4. Behavioural interventions and women

"Women's financial decisions are influenced more by perceived risk than those of men."

The review identified 16 studies that explicitly measured and reported the relationship between a given behavioural intervention and women's financial decisions. It is important to note the difficulty in obtaining sex-disaggregated results and finding coefficients for take-up and usage of financial products for women only. Fewer than 17% of the papers identified in the systematic review disaggregated their data or results by gender. Often, when they did present results disaggregated by gender, the differences in findings between men and women were not discussed or interpreted in the paper. In some cases, where there was a focus on the effect on women, it was in the context of a study focused on women exclusively.

Despite these limitations, the available results give us useful and actionable insights into the effects of behavioural interventions on women. The section below seeks to extrapolate what we can from the general behavioural science systematic review, and it analyses how this relates to women. We use the same organising principles as defined in Section 3.2 to discuss the selected studies, namely client choice architecture, commitment features, pricing and financial benefits and client communication.

4.1 Client choice architecture

Opt-in/opt-out default interventions are comparatively more effective at influencing women's longer-term savings decisions than those of men. Brune et al. (2016) implemented a field experiment in Malawi to observe the way in which households manage a windfall payment of USD60. This could be received in either cash or deposited directly into their existing savings account. Subjects who received the payment automatically into their accounts were found to have higher savings in their bank accounts, and this persisted for a period after the payment was made. Disaggregating by gender, this study found that men and women do not treat windfall gains significantly differently for the first 14 days following receipt of the payment. But gender effects occur after this point: women in the default deposit group experienced a three-fold increase in their bank balance compared to women in the cash-receiving group. Conversely, men who received the windfall in their account saved less in their accounts after 14 days than men receiving cash, although this effect was not significant. These findings suggest that the positive effects of direct deposits experienced by women do not apply to both genders: savings defaults have a progressive and influential effect on women that persists for more than two weeks, while having the opposite effect on men.

"Savings defaults have a progressive and influential effect on women that persists for more than two weeks, while having the opposite effect on men."

4.2 Commitment features

The various categories of financial products, which encompass savings, credit and remittances, can employ commitment features in different ways. In this section, we present the results of the gender studies that employ commitment features by these product categories. For each case, we present some details and study results and what they tell us about how commitment features influence the financial decisions of women.

Savings

Women who tend more towards short term consumption are more likely to open a commitment savings account. Ashraf et al. (2005) designed a commitment savings product for a rural bank in the Philippines. The product restricts access to savings for a predetermined period or until a specific amount has been saved (without explicitly committing clients to contribute to the account). Existing and former bank clients were requested to complete a survey that measured their preferences for future consumption versus present consumption, as indicated by time discounting curves[7]. Women who reported a greater preference for present consumption were more likely (by 16 percentage points) to open the commitment savings account than men with the same preferences. These women were also significantly more likely to take up the savings product than other women who demonstrated greater preferences for future consumption (Ashraf et al., 2004). In effect, women who may find it challenging to save are more likely to enrol in commitment devices to assist them in this task than their male counterparts.

Women are more likely to enrol in a deposit collection service than men, leading to higher savings accumulation for women. A related study by Ashraf et al. (2005) measured the uptake and usage of a door-to-door cash deposit collection service in five rural villages in the Philippines (Ashraf, Karlan & Yin, 2005). Researchers found that the savings of those who participated in the service increased by 25%. Women offered the collection service were 11% more likely to take up the service than women who were not. Married women were 13% more likely to take up the deposit collection service than single women. Married men were no more likely to take up the service than single men. Women who had some college education were 16% less likely to take up the service than those women with no education, while older women were 0.3% less likely than younger women to take up the service.

7 Time discounting curves represent an individual's preference for consumption over time. The curves are roughly hyperbolic in shape as a result of the rate at which individuals discount future potential rewards/consumption. Higher discounting curves are due to a high discount rate for immediate rewards and a lower rate for rewards further into the future (Ashraf, 2006). This can be obtained from asking participants whether they prefer a smaller amount of money today or a larger amount at a later stage. The question is then asked again with the same rewards but at a further point in time (Ashraf, 2006).

Soft commitment features, such as a safe space to save, are effective in increasing women's savings. In a randomised control trial in Bihar, India, Kc et al. (2015) tested whether providing women with context-specific financial education or a lockbox with a key, or a combination of the two, had an impact on 203 women's savings capability over a three-month period. They found that the savings of women who received the financial education increased by 8%. The savings of women who received both the financial education and the lockbox increased by 42%. Interestingly, women who only received the lockbox and key had the largest increase in savings (by 51%).

This is a slightly counterintuitive finding in that the lockbox condition alone performed better than the lockbox and financial education group. One might presume that financial education in conjunction with the provision of a savings lockbox would enhance the positive effect on women's savings offered by the lockbox condition.

Another unexpected result is found in the Philippines, where a savings commitment product was offered (Hofmann, 2014). This product required that individuals make regular fixed deposits into their accounts, with a penalty enacted in the case of default, which was defined as being three instalments late. This study found that women who took up the commitment product were significantly more likely to default on their savings contract than men who had taken up the product. Women were therefore less likely to stick to the savings plan and to make regular deposits when the risk of penalty was disclosed to them. This complements the finding above, which states that soft commitments are more effective on women than hard commitments. Harder commitments (such as penalties) tend to have the opposite effect from that intended on women. Softer commitments are more encouraging and subtly nudge women to improve and focus on their financial outcomes.

"Softer commitments are more encouraging and subtly nudge women to improve and focus on their financial outcomes."

The five studies above highlight the positive impact of commitment devices and services on women's savings. Women recognise when they need commitment devices, and they take up the services when given the opportunity. Even soft commitment devices (such as in the case of the lockbox study, where women still had the key at home with them) were effective at increasing savings amounts.

Remittances

Men and women differ in the amount they would remit when they can control how the funds are used by the recipient. In an experiment by De Arcangelis et al. (2015), researchers developed a remittance product called EduPay, which enabled Filipino migrant workers in Rome to direct their remittances towards educational purposes. Individuals participated in a lab-in-the-field experiment, where they were asked to allocate money for remittances to recipients in the Philippines. Men were significantly more responsive to the control of funding purpose than women: they remitted 46 euros more than women when they could label their direct payments for educational purposes. Ultimately, both men and women enjoyed having control over their remittances, but this effect was more pronounced for men. This suggests that different marketing strategies are required for men and women for similar products in practice (De Arcangelis et al., 2015).

Credit

Grace periods for loan repayments are associated with higher default rates for women. Providing women with a grace period before loan repayments begin enables them to invest in riskier business ventures. In a study by Field et al. (2010) in West Bengal, researchers investigated how such a grace period affects loan repayment behaviour. Women were randomly assigned to either a control group commited to a traditional, immediate loan repayment or to the 'treatment' group, which enjoyed a two-month grace period before repayment was to begin. Women in the grace period treatment group were significantly more likely to default on their loan (up to twice the increased default rate) than those in the control group; women with an earlier repayment commitment were more likely to repay. If government or development initiatives are attempting to promote women's entrepreneurial activity, introducing a grace period before loan repayment could encourage women to pursue business ventures but at an increased risk that they will default on their loans.

4.3 Pricing and financial benefits

Discounts and incentives are effective in increasing uptake and usage of bank accounts. Dupas and Robinson (2013) provided market vendors (mostly women) and bicycle taxi drivers (all men) in rural Kenya with the opportunity to open a bank account at no cost. The researchers also covered the minimum balance requirement for participants. Individuals in the control were not provided with either of these incentives. Participants cited their reasons for not having a formal bank account to be the bank's high opening fees and high minimum balance requirements. These factors tend to lead individuals, and particularly women, to seek out alternative and informal savings products such as Rotating Savings and Credit Associations (ROSCAs). Thus, the researchers hypothesised that eliminating these barriers for participants could act as an incentive to take up the accounts.

"Women therefore take advantage of free savings accounts and use them beyond just the minimum balance deposit."

The study found that these female participants used the bank accounts more and increased their savings four-fold compared to women who were not given the incentives. Women's savings were more than double that of men: deposits for men were USD18, while for women they were USD41. Kast and Pomeranz (2014) also attempted to reduce the barriers to saving by providing access to free savings accounts in Chile. They measured whether bank accounts were being used after the minimum opening balance had been deposited. They found that, for women, the take-up rate was 20% higher when compared to the average take-up rate. Women therefore take advantage of free savings accounts and use them beyond just the minimum balance deposit.

Women's financial decisions are influenced more by perceived risk than those of men. A lab experiment in Holland tested the effects of a loss or a gain frame on pensioners' decisions to increase the size of the lump-sum payment on retirement (Bockweg et al., 2016). In the experiment, women were more likely than men to choose a larger lump-sum pay-out when the remaining (unwithdrawn) pension benefits and returns were framed as an "investment gain" as opposed to being framed in more neutral language. In this instance, women showed a stronger aversion to the risks associated with investments by choosing a larger, but certain, lump-sum payment on retirement.

4.4 Client communication

Women are strongly influenced by their peers when selecting financial products. Duflo and Saez (2002) tested whether the uptake of a retirement savings product was influenced by the decisions made by colleagues at an American university. Randomly selected individuals from various departments, who had not yet enrolled in a retirement savings plan, were invited to attend a retirement information fair. Subsequently, uptake of the pension product was observed through a correlation between the individual's decision and that of their colleagues. Interestingly, women's uptake of the pension product was found to be influenced by the participation of other women; a 1% increase in participation of women led to a 0.2% greater probability of a women taking up the product. Similarly, men were influenced by the decisions of other men and had a 0.09% higher probability of participating if other males participated. There were no cross-gender impacts: Women were not significantly influenced by the decisions of men, and men were not significantly affected by the decisions of women.

This study highlights that individuals may be influenced by members of their own gender groups, and it is consistent with the literature on peer effects influencing women. For example, Field et al. (2010) found that women who attended a business training programme with a friend doubled their subsequent demand for loans and had increased business activity and higher household income. Additionally, a study by Duflo and Saez (2002) found that savings enrolment for female employees was significantly affected by the average participation of other women, but not by that of men.

In another study, Darolia (2016) investigated the effect of a low-touch informational intervention on student borrowing. Simplified information on future monthly payments, as well as information about the borrowing choices of their peers, including amounts and types of loans, was provided to students in the treatment group. Results from this study indicate that the informational letter led to a 1.4% lower probability of having a loan. This effect was even greater when disaggregating by gender: females who received the additional information were 2.9% less likely to take a loan than males. On average, female students also borrowed USD29 less than male students; however, this difference was not found to be significant.

Women are at greater risk of default when their microfinance lending group consists of only women. The outcomes of women working together was not always found to be positive. A lab experiment in Egypt replicated the decision to participate in a group lending environment and then measured the decision to repay one's individual loan (El-Gamal et al., 2011). It found that when both players were female, there was a significantly higher probability of participating, but also a higher probability of default. So, while women may choose to join community lending groups when it consists of other women, this may make it less likely that the loan will be paid back.

"The outcomes of women working together was not always found to be positive."

In some instances, advertising content is less effective in influencing women's financial decisions than those of men. A study based in South Africa by Bertrand et al. (2010) randomised the price and creative features of direct mail loan offers. The eight variations included the photo depicted on the loan offer, mentioning that they speak the client's language, displaying a special or low rate, suggesting potential uses for the loan, showing the interest rate, comparing the rate to a competitor rate and, lastly, displaying the chance to win a cell phone in a raffle (Bertrand et al., 2010).

The first element (the photograph) was used to target an individual's affect bias, which is an emotional bias that occurs when an individual taps his/her affective feelings when making a judgement or decision. Seeing the photo of a female on the loan offer, rather than a male, was associated with an overall 6% increase in loan applications. This was largely driven by the change in behaviour of men, as the impact on women was statistically insignificant. A woman seeing another woman on the loan offer does not significantly influence her decision to apply for a loan. This result is interesting and somewhat contradictory to the peer effects observed in the Duflo and Saez (2002) study. One may have anticipated that due to peer or gender effects, seeing another woman's photo would positively influence women's take-up of the loans.

Future areas of research could investigate whether peer effects only hold when they occur in person with colleagues or friends, as opposed to marketing materials, which may be less effective.

5. Study limitations and concluding remarks

"The results of this study contribute to ongoing explorations into how the design and delivery of financial services influence the financial decisions of women."

The review identified 16 studies that explicitly measured and reported the relationship between a behavioural intervention and the financial decisions of women. It is important to note the difficulty in obtaining sex-disaggregated results and finding coefficients for take-up and usage of financial products for women.

5.1 Limitations

The qualitative review in Section 4 draws on the findings of a systematic review that only considered the results from experiments or randomised trials published in English. This paper thus excludes rich evidence on the financial decision-making of women that uses other research methodologies or where the results were not translated into English. While the 16 studies identified provide rich insights into how product features or explicit interventions by financial services providers can influence the financial decisions of women, the available evidence does not yet provide us with generalisable results across all four retail product classes (savings, credit, payments and insurance) for all the behavioural interventions (18 in total) identified across the unique financial decisions (11).

"In some instances, behavioural interventions can widen the financial usage gap between men and women."

5.2 Concluding remarks

The results of this study contribute to ongoing explorations into how the design and delivery of financial services influence the financial decisions of women. They highlight how behavioural science can shed further light on this question, and how behavioural interventions, when designed with women in mind, can expand the ways in which financial services benefit women in general.

The qualitative synthesis provides sufficient evidence that behavioural interventions in many instances do not have a uniform impact on the financial decisions of men and women. In some instances, behavioural interventions can widen the financial usage gap between men and women. In other instances, they can provide women with powerful opportunities to achieve their financial goals.

The existing evidence on the savings decisions of women and the use of hard and soft commitment features, provide financial services providers with "field-ready" insights that can improve how women achieve their financial goals. Evidence from the practical application of these insights by financial services providers could supplement the academic research.

Future academic or applied research would do well to focus on the behavioural intervention and financial decisions that have, as yet, not reported gender-disaggregated results, or where the nature of the studies limits the generalisability of the results. In particular, they might focus on how financial services providers can structure the choice architecture of financial products, so as to positively influence the credit, payment and insurance decisions of women. Lastly, as financial services providers increasingly adapt their communication with customers, it would be useful to better understand how communication interventions affect the financial decisions of women in particular.

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Appendix A

Countries in which behavioural experiments have been conducted on the uptake or usage of financial services

Country	Experiments in Database
United States	52
India	13
Philippines	10
Malawi	6
Kenya	5
South Africa	5
Chile	3
United Kingdom	3
Colombia	2
Mexico	2
Mozambique	2
Peru	2
Afghanistan	1
Australia	1
Bangladesh	1
Bolivia	1
Canada	1
China	1
Egypt	1
El Salvador	1
Ethiopia	1
Ghana	1
Guatemala	1
Holland	1
Hong Kong	1
Indonesia	1

Source: *Author's own.*

Appendix B

Search terms used in systematic review of literature

Account, anchoring, commitment(s), credit, default(s), earmarked, experiment(al), financial inclusion, financial service(s), framing, implementation intention(s), incentives, insurance, intervention(s), loan, microfinance, microinsurance, microloan(s), nudge(s), payment(s), pension, reminders, remittance(s), saving(s), and virtual reality