

Erin B. Taylor & Gawain Lynch

Consumer Finance Research Methods Toolkit



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By Erin B. Taylor and Gawain Lynch
Foreword by Bill Maurer

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“We still have to remind those working to create and introduce new money, financial and payment systems into the world that such systems are used by... people!”

Bill Maurer,
Director, IMTFI

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Figure 1

FOREWORD

When the first edition of this Toolkit was released in 2016, I asked, in my prefatory remarks, “Why a consumer finance research toolkit, and why now?” I wrote mainly of the explosion in new payment, financial and insurance technologies being introduced into social systems and markets around the world, often with unintended consequences, and often with little forethought on the part of their developers as to how these new technologies would impact the human side of money and finance.

While I could easily make the same case today, three years later, it is striking how some things have changed quickly, and others, not at all. “Fintech” is now a word, and a business and investment space. The term was still relatively new in 2016 (and it wasn’t used once in the first toolkit!).

But payment is still ... boring, despite all the hype and new technology “deployments.” How many readers of this report have used Apple Pay a few times only to abandon it because of its lack of general availability, ease of use relative to cash or cards, or force of habit? How many have re-adopted it since purchasing a smart watch? And how has the cost of such devices pushed new payment technologies ever further up the socio-economic hierarchy, leading many at the bottom back to cash?

Cash, meanwhile, has been under assault, even as its continued use makes it seem more resilient than ever. In countries like the US and the Netherlands, for example, more and more merchants have gone cashless and celebrate their status as such. Realizing the exclusionary impact of refusing cash at the point of sale, municipalities and some states in the US have been pushing back, banning cashless stores. Cryptocurrencies have reached record valuations, only to plummet again, firing up the speculative imagination as well as generating much-needed scepticism.

On the horizon: artificial intelligence is increasingly being used to predict consumer behaviour and price risk—and will potentially unleash new forms of discrimination and injustice. The presuppositions of the post-World War II liberal order are under assault and the regulatory frameworks guaranteeing fairness and accountability are being rolled back at a rapid pace, making more urgent than ever the responsibilities of the

business community to ensure fairness, equity, and even financial justice.

Money and payment have opened up for political and social discussion as never before. Since the dawn of agricultural states in the ancient Near East thousands of years ago, accounts-keeping has been central to the allocation of resources in complex societies. You know something interesting is afoot when respectable journalists or government officials question the long-run viability or existence of physical banknotes, or even state-issued currency itself. In the United States, we have not seen such enervated discussion over the nature of money since the greenback/goldbug political conflicts of the late 19th century.

It is curious, then, that we still have to remind those working to create and introduce new money, financial and payment systems into the world that such systems are used by... people! And people use them in systems that are simultaneously social and technological, systems that they use by choice or necessity to meet their basic day to day needs, while also using the technologies of money—from cash to Venmo to WeChat Pay—to make social connections, honour the dead, fulfil religious obligations, or make political statements.

How people do money is often more significant than what money is, and the debates over what it is are almost always grounded in the ways that people use money and its associated technologies to get by and make do.

This updated Toolkit provides a roadmap for a deep and nuanced understanding of the ways people do money, and the ways technologies are complexly integrated into existing socio-technical arrangements. Approaching these questions requires guides to careful research, like the ones presented herein, and a small degree of hubris.

The future is hard to predict—but it is surely a future of humans making meaning and social relationships with one another through consumer financial technologies and systems. The methods provided in this toolkit help us get a handle on how they do so, and to what ends.

Bill Maurer

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Figure 2

“If business and society are to benefit from financial transformation, it is crucial we understand how diverse consumers around the world are reacting to their increased choice in financial services.”

INTRODUCTION

The financial services industry is facing an era of unprecedented change. New products are appearing on the market every day, and many of these are offered by technology companies rather than traditional institutions like banks and insurance companies. Consumers have more choice than ever before and they are voting with their feet. To make things more complex, how consumers use financial services is changing. One of the hallmarks of this era is that financial services are becoming more customer-centric. Consumers now expect products tailored to their needs,¹ yet classic market segmentation is no longer reliable in product development and marketing.

Digital transformation in financial services presents challenges for traditional and non-traditional financial service providers (FSPs). They must not only stay informed about their competition, but also try to anticipate how diverse consumers will behave in future markets.

The stakes are high for business. While the public image of finance often centres around Wall Street-style investment banks, consumer finance actually accounts for the majority of transactions worldwide via both formal and informal services. Annual retail banking revenues amount to USD \$3.4 trillion, and according to the World Bank, global remittances reached USD \$401 billion in 2012.² The World Payments Report 2018 states that rates of non-cash transactions grew by 10.1% during 2015-2016, reaching a total of USD \$482 billion.

The stakes are also high for society. 'Fintech' has the potential to provide all kinds of benefits to consumers. It can expand consumer choice, increase access to product information, assist with financial literacy, and decrease transaction costs. However, it can also give rise to new problems, such as fraud, user errors, learning difficulties, ineffective UX, stress, and financial mismanagement.³

If business and society are to benefit from financial transformation, it is crucial we understand how diverse consumers around the world are reacting to their increased choice in financial services. 'Business as usual' is a strategy for failure. Instead, we must find new ways to generate meaningful consumer insights and apply them to the development of products and policies.

The *Consumer Finance Research Methods Toolkit* (CFRM Toolkit) presents cutting-edge approaches and methods being done across different sectors of finance. We give practitioners a starting point to think about how they can improve their research and prepare their organisations for the future.

ABOUT THE CFRM TOOLKIT

This toolkit was produced as part of the IMTFI's Consumer Finance Research Methods Project.⁴ It demonstrates how different methods are being applied in finance research to help both for-profit and not-for-profit organisations cope with rapid changes in the sector. It is designed to help researchers and managers to:

- Learn about innovations taking place in consumer finance research
- Understand how to use research to improve their organisation's strategy
- Facilitate connections between researchers and organisations with complementary expertise

Just as consumers have an ever-increasing choice of financial products, researchers have an ever-increasing array of methods at their disposal. This Toolkit provides readers with inspiration for ways they can develop their research, either by themselves or in collaboration with others. Readers can choose to learn about applications that are familiar to them, or discover entirely new methods and professionals who practice them.

WHAT IS CONSUMER FINANCE?

We define consumer finance as money management practices by individuals and/or households using a range of financial tools (such as money, bank accounts, cards, transfer services, mobile money, microfinance) to achieve financial goals (such as saving, lending, borrowing, investing, insuring).

Generally this definition does not include money management within businesses. However, we recognise that there are many households around the world that do not clearly separate their household expenses from their business expenses. We therefore maintain a flexible definition.

WHY A RESEARCH TOOLKIT?

Consumer finance research across all sectors faces common issues:

- Consumer finance markets are changing fast globally, and our research methods need to be adaptable to shifting consumer practices
- Due to the global connectivity of financial systems, collaborations between different kinds of organisations (universities, industry, NGOs) are becoming increasingly helpful to understand and reach consumers in different places
- Financial practices often include both qualitative and quantitative elements, making it important for researchers to have a good basic knowledge of methods outside their own area of expertise
- Getting good data while protecting research participants' privacy is a major challenge where issues of money and technology are concerned
- There are competing theories about how people make financial decisions, and being familiar with a range of different research methods can help us understand why researchers' explanations differ

The right research design can help produce rigorous data and relevant insights, while ensuring that the privacy of research participants is protected. A well-developed research strategy can help organisations stay competitive. We hope that the CFRM Toolkit will assist researchers in discovering new ways to tackle problems and forge fruitful collaborations.

Example I: Design research for digital transformation

Todd is a social scientist working in a research institute. For ten years he has been studying informal financial practices among people in Southeast Asia, primarily using a combination of surveys and third party data.

Recently, the majority of his research participants have begun to use a range of digital financial services. He realises that he is going to have to adapt his methods in order to understand how these new changes are affecting financial practices. Todd browses through this toolkit and decides to combine portable kit interviews with online research in forums where users exchange tips about using financial products.

WHO IS THIS TOOLKIT FOR?

The CFRM Toolkit is intended for use by anyone who needs to adapt to the new global finance market:

- Innovation specialists
- Research and design teams
- Organisations and companies
- Individual professionals
- Instructors and students

User insight specialists, designers, NGO workers, policy specialists, and academic researchers are among those who may benefit from the Toolkit's descriptions of how different methods are applied to a wide range of problems around the world.

Whether you work in the field, in a lab, or at home on your notebook, this Toolkit covers methods that are relevant to your research context.

Example II: Choose the right experts

Anette is a manager in a medium-sized NGO. Her team has been using household survey data to study conditional cash transfers in Ecuador, but she is dissatisfied with the results. She suspects that the primary cash flow isn't from government to household, but from household to household.

Prompted by the financial diary studies showcased in the CFRM Toolkit, Anette decides that her organisation needs to do this kind of study to collect the qualitative and quantitative data they need. Anette isn't an expert in these areas, so she contacts relevant professionals to form a collaboration.

Example III: Learn new methods

Melanie is a UX researcher working in a bank. Her team use methods like prototyping, task analysis, A/B testing, surveys and data analysis to understand how their customers are using their products. They are working on a new money management app, but realise they know little about their customers' daily practices or how they use tools from other providers.

Looking at the Toolkit, the team decide that ethnography will help them to gain deeper insights into how their customers manage their money in the context of their everyday lives. They design a research project and select a small team to go out into the community and into people's homes to conduct participant observation. They then feed this data back into product development.



Figure 3

“Innovation involves much more than simply coming up with a good idea: it requires understanding how the market for financial services is changing, and how humans are adapting to it.”

INDUSTRY CHANGES AND HUMAN CHALLENGES

In a fast-changing market organisations need to be innovative if they are to survive. But innovation involves much more than simply coming up with a good idea: it requires understanding how the market for financial services is changing, and how humans are adapting to it.

For organisations to succeed in today's financial services market, they must come to terms with the fact that the changes we are witnessing are not going to settle down any time soon. But understanding change is hard, and predicting changes in *human* behaviour is even harder.

This is because these changes are caused by a wide range of economic, technological, social, and cultural factors, and these factors change at different rates.

This is a big challenge, but it's not impossible. The first step is to identify the changes taking place. The second step is to get hold of good information. Research and researchers will play a key role in helping organisations gauge present and future markets.

In this chapter we focus on identifying major changes. Here are a few that are causing headaches for industry, NGOs, think-tanks, and others operating in the financial space.

TECHNOLOGY CHANGES FASTER THAN PEOPLE

You build a new product and put it on the market. You know it is useful and will improve people's lives. Why don't they use it?

There are many reasons why products fail, but one that we often forget is that technology changes much faster than human behaviour and culture. This means that there is always a lag between product availability and market uptake.

This gap causes frustration for companies that have created a product they believe will help people, but are struggling to sell it. It also causes headaches for researchers, who increasingly pin their hopes on quantitative data to generate the insights they need.

CONSUMERS HAVE FAR MORE CHOICE

We can now choose from a dizzying array of financial providers and products from around the world. We also have more choice as to how we combine them. We can create our own financial toolboxes with elements from different providers, buying health insurance from one company, travel insurance from another, transferring money through different providers, and so on.

In many ways, this is great for consumers. However, more choice is not always better. Even though we may have access to more product information than ever before (thanks to the Internet), the sheer number of products available makes it difficult to compare them and make the right choices. We end up getting 'decision fatigue', and we make no choice at all.

This conundrum has been long observed in the insurance in-

dustry, where people particularly struggle to understand what different policies will actually cover.⁵ Credit products generate similar issues, since people often do not understand the conditions they are agreeing to (such as how much interest they will end up paying in total).

Problems of product choice and asymmetric information are compounded today, since products are both more numerous and come from a far greater range of companies and geographic locations than in the past.

'EARLY ADOPTERS' ARE NOT WHO THEY USED TO BE

As marketers and advertisers have known for hundreds of years, few people start using a new product simply because it is useful. It is much more likely that they adopt a new product because of 'social proof'—someone they trust or admire used it first.

'Early adopters' are therefore key to the success of any new product entering the market. They used to primarily be young men living in wealthy countries. This is no longer the case.

Today, early adopters can be anyone: old or young, male or female, and located anywhere. This makes market segmentation challenging. It is even more challenging if we refuse to recognise these changes and the complex diversity in the market.

CULTURE IS COMPLEX

Financial behaviour can differ enormously from place to place. For example, Germans are known to be cash-centric, whereas the Dutch prefer to pay with card.⁶ In Kenya, people favour M-PESA as a way to send money to each other, rather than via their bank accounts. The most popular payments platforms in China are not the same as those in the USA.

Geographic differences in financial behaviours and preferences arise from cultural, technological, and economic factors. If we want to understand consumers at home and abroad, we need to look beyond the usual WEIRD (Western, Educated, Industrialized, Rich, and Democratic) nations. We must find out how consumers think and act, what they value, and how they spend their money.

Comparing the financial practices of consumers in different places can help us to understand why people respond to changes differently. There is a wealth of valuable information being produced by researchers from all over the world (including the Institute for Money, Technology and Financial Inclusion [IMT-FI]). This information can help us to better design and target our products, programs, and policies.

COMPETITION IS GLOBAL ...

The digital transformation of financial services is truly global. There are approximately five billion adults around the world using financial services. With smart phones in the hands of the majority of the world's population, people are no longer wholly dependent on domestic services, and companies are increasingly able to offer services globally. Organisations providing financial services need to take into account the fact that people are shopping for consumer finance products in a global market.

Companies wishing to expand into new markets need to understand the competition. Today, many innovations in consumer finance begin in the 'Global South'.⁷ China, Brazil, Mexico, India and Kenya are just some examples of markets that are ahead of the global curve when it comes to many consumer finance products. Safaricom's mobile money service in Kenya, M-PESA, is one such example.

The key to understanding your global competitors today is to realise that they may not be who you expect. The most successful businesses might be those that began as a one-person start-up in a remote location. Competition has been democratised—and that's a good thing.

... AND SO ARE PEOPLE AND THEIR MONEY

The world's population is increasingly mobile, and the new generation of financial services is perfectly positioned to serve mobile people. For the past few decades, the main products serving travellers and migrants have been credit cards and money transfer services. In recent years competition has swelled, with thousands of transfer services and currency converters appearing on the market.

This market interest is not surprising given the money at stake. Remittances to low and middle income countries reached \$554 billion in 2019, although they are expected to decline due to Covid-19.⁸ Private remittances often make up a significant proportion of national GDP.

Global mobility also means that our 'home' markets are connected to other places financially. Consumers may have bank accounts, investments, and businesses in more than one country. While this is still fairly rare, it may be less so in the future. At present, most financial aggregator apps, such as Mint, do not allow consumers to connect bank accounts in more than one country.

BANK? WHAT'S A BANK?

In countries with large 'unbanked' populations,⁹ the technologisation of finance is helping people to skip the transition from retail banks to other service providers altogether. Around 35% of adults lack a formal bank account or similar.¹⁰

Instead of extending banking networks, which require a great deal of infrastructure and investment, basic financial services

are being offered through microfinance agencies and mobile phone-based systems. These kinds of financial services are capitalizing on new knowledge about how low-income people spend their money.

Mobile money services, which allow people to make transactions using ordinary phones, are particularly useful because they give people access to a range of services under the one platform. This includes domestic and international transfers, merchant payments, savings accounts, insurance, and credit. These services replace or complement a wide array of informal services, speeding up transactions and reducing costs.

FINTECH HAS THE POTENTIAL TO CLOSE THE GENDER GAP

According to Kantar,¹¹ financial services are missing out on nearly USD \$800 billion in profits because they are not developing services with women in mind or marketing to them directly.

The Global Banking Alliance for Women report that women make or influence 80% of purchasing decisions globally, yet 73% report being unsatisfied with their financial service providers.¹² Women are in a position to make or break companies offering new products on the market. Companies ignore women at their peril.

Designing and delivering financial services to women presents a double opportunity. First, it can help companies make bigger profits. Second, it can help overcome the very real gender gap that still exists between women's and men's financial health.

Yet until recently, financial service providers were not willing to tailor services or advertising to women's needs, preferences, and lifestyle.¹³ Apart from a few isolated attempts to tap into the 'pink dollar', such as feminised credit cards (think pink and Hello Kitty),¹⁴ most financial services were historically designed according to a one-size-fits-all model.

Whether we are male or female, old or young, our bank accounts, debit cards, mortgages, and insurance products are essentially the same.

Today, however, things have changed. The new generation of 'fintech' services specialise in niche products and markets. Designing products specifically for women is more technologically and economically viable than ever before.

As Anette Broløs and Erin B. Taylor describe in the report *Female Finance: Digital, Mobile, Networked*, an increasing number of financial service offerings are designed for (and by) women. And delivery is just as important as design. Women value services that speak to them and reflect their life context. It's time we stopped following the 'one size fits all' model for financial services.



“Just as consumers have an ever-increasing choice of financial products, researchers have an ever-increasing array of methods at their disposal.”

RESEARCH METHODS

Table: Strengths and limitations of the methods in this toolkit

Method	Strengths	Limitations
Ethnography	<ul style="list-style-type: none"> • Research occurs in context • Hands-on participation results in learning more about participants • Can be used to cross-check data sources • Track people's behaviour over time • Increases trust in the researcher 	<ul style="list-style-type: none"> • Not representative of the general population • Usually not replicable • Resource-intensive
Interviews	<ul style="list-style-type: none"> • Uses a first-person perspective • Flexibility of location • Versatile: can use with other methods • Sometimes quantifiable 	<ul style="list-style-type: none"> • Subject to self-reporting bias • Resource-intensive • Can be complex to design, depending on aims
Object-centred methods	<ul style="list-style-type: none"> • Assists in generating discussion • Can help participants understand what the researcher is asking • Focus on specific features of objects • Prompts participants to recall information accurately • Can produce user-created data 	<ul style="list-style-type: none"> • Subject to self-reporting bias • Resource-intensive
Financial diaries	<ul style="list-style-type: none"> • Show how participants use a range of financial products • Track participants' financial behaviour over time • Record information creatively • Increase financial awareness 	<ul style="list-style-type: none"> • Not always representative of a larger population • Subject to self-reporting bias • Timing of data collection can be difficult
Digital research	<ul style="list-style-type: none"> • Researcher does not need to be physically 'on location' • Expands the range of tools available for research • Facilitates follow-up studies 	<ul style="list-style-type: none"> • Limited access to some groups, e.g. people who are not on the internet • Remote data collection can reduce data quality
Experiments	<ul style="list-style-type: none"> • Permit control of variables • Often replicable • Randomised Controlled Trials (RCTs) demonstrate impact 	<ul style="list-style-type: none"> • Design flaws can invalidate experiments • Results may not reflect real life behaviours • It can be difficult to form a representative sample

ETHNOGRAPHY

Ethnography has a long history in consumer finance research. Since the late 19th century, anthropologists have used ethnography to discover how people create, share, and manage money. Researchers have investigated topics as broad as the development of shell money as currency in Melanesia, community-based savings associations in Africa and the Caribbean, and use of tally sticks to record debt in many parts of the world.

As more consumers around the world adopt formal financial products and services, ethnography is being used to investigate an increasingly wide range of behaviours and products, including household financial management, payday loans, mortgages, microfinance, money, Islamic banking, and remittances.

Ethnography as a method is also changing. Technological developments have resulted in an entirely new field known as *computational anthropology*.¹⁵ Ethnography is also a core method in *human-centred design*,¹⁶ an approach to research that incorporates interactions with people into the design of a product or service.

WHAT IS IT?

- Qualitative
- Combines participant observation with other methods
- Face-to-face or remote data collection

Ethnography is a method of studying people in the places where they live or where the action is taking place. It is a versatile method that can be coupled with both qualitative and quantitative techniques, and can be used in virtually any setting.

Ethnography is particularly useful in consumer finance to understand how consumers adapt to changing products or economic conditions, and how people's financial behaviour is influenced by their social environment.

Technically, ethnography is more of an approach than a method because ethnographers often use multiple ways to collect data.²³ However, all ethnographic studies have two features in common:

1. Research is carried out within a real-life setting. This could be a village, neighbourhood, workplace or online (such as an Internet forum).
2. Researchers use observational techniques alongside other methods to record actual behaviours as well as reported ones.

The cornerstone of ethnography is participant observation, which involves learning about people's experiences by doing activities with them and recording observations in extensive field notes. Ethnographers complement this with data obtained in other ways, including recording interviews, analysing documents, or deploying questionnaires and surveys.

Ethnography's emphasis on living with people and observing their behaviour in real-life contexts distinguishes it from other qualitative methods, which tend to rely on formal interviews or qualitative analysis of other data, such as video [for an exception, see Experiments].

Examples of use

- The International Finance Corporation did an ethnographic study of the barriers to, and drivers of, trust in digital financial services in sub-Saharan Africa.¹⁷
- The Hitachi group of companies, within their Center for Social Innovation, uses ethnography to identify social trends and changes to people's values (kizashi method) for fintech product development.¹⁸
- Microsoft researcher Jacki O'Neill and her team looked at the context of digital loan payments and collection via Airtel Money among low income rickshaw drivers in India. They found that direct transactions fail to address the need for flexible repayment of loans.¹⁹
- Lisa Servon used participant observation to investigate why and how customers use payday loans in a check-cashing store in New York City.²⁰
- Zuzsanna Vargha did ethnographic fieldwork at a Hungarian home savings and loan bank to understand how banks explain financial plans to clients.²¹
- Melissa Cliver and her team carried out a project in California to better understand how individuals who would become newly eligible for food benefits might interact with a streamlined food benefits application process.²²

STRENGTHS

Research occurs in context

Ethnographers carry out research within real life contexts. The social environments in which people live and work—home, office, school, social media, and so on—significantly affect their actions and choices. Moreover, what people do in real life is often very different to what they do in a lab, or report in an interview or survey.

People often do not accurately recall information, they leave out information if they feel it is unimportant, or they might avoid a topic because there is a cultural taboo on discussing it. People especially struggle to find the words to explain their habits (such as why they keep documents in certain places) [see Case Study 2].

Participation as a way of learning

Participant observation is used by ethnographers to gain an insider's view into how people act, think, and feel. When we join in on an activity, we often notice things that passed us by when we were, well, bystanders. For example, standing in a bank line with a customer can be a powerful method to understand their frustration at having to wait, and to figure out what can be done to make transactions more efficient. Similarly, using a product ourselves (such as a banking app) helps show up design flaws that research participants might not think to mention when asked for feedback.

Cross-check data sources

Doing observations can help researchers learn about things that our research participants don't tell us. But how can they be sure that we are interpreting our observations correctly? Because ethnographers combine participant observation with other kinds of data, they can compare these to reality check their analysis.

If a researcher discovers that there is a contradiction in what their different data sources are telling them, they can then put more effort into figuring out why this gap exists. This produces more reliable insights at the end of the day.

Track behaviour over time

Because ethnographers generally spend considerable time in the field (ranging from days to years), they are able to record data on repeated and changing behaviour, such as product adoption, yearly household financial cycles, and work patterns.

This can be particularly useful in consumer finance research because people's interactions with money and financial products are often cyclical:

- Most people get paid at specific times (such as monthly)
- People receive and pay bills at regular intervals
- Spending patterns differ throughout the year due to changing seasons or religious festivals (e.g., many people spend more money at Christmas time)
- Yearly bonuses or seasonal economies (such as selling at summer festivals) may mean that people earn most of their income within a short time frame each year

Tracking these cycles can generate valuable information to design products and services, or to simply understand how people manage finances over time.

Increase access to sensitive data

People often consider their financial information to be private and are reluctant to share it. Ethnography can help to overcome this barrier because researchers often spend enough time in the field to build relationships with their research participants and gain their trust.

Participants have more time than usual to learn about the researcher and their work, and to ask questions about how the data will be used. Access to data therefore often comes about because researcher and participants have co-negotiated important personal and ethical issues.

LIMITATIONS

Not representative of the general population

Ethnographers do not usually collect data based on representative samples. This means that, while their findings can count as evidence we cannot assume that people generally behave in the ways that ethnographers observe.

The exception to this is comparative analysis, in which ethnographers compare data from a range of different studies (often produced by different researchers and at different times) to spot patterns and create more general insights.

A lack of representativeness is unlikely to present a problem for researchers who want to test a product in development, because even a handful of test subjects can uncover flaws in a product design. Nor is it a problem for researchers investigating edge cases or early adopters, since by definition these groups are not representative of the general population.

However, hard data is more useful for figuring out whether a product or policy is applicable to a broader population.

Usually not replicable

Ethnographic studies are rarely replicable for two reasons. First, they involve the study of complex social phenomena that are prone to change rapidly. Second, gaining access to the same sets of people that participated in an original research project can be difficult as they may have moved, or they may no longer have time to participate in an in-depth study. Research that requires replicability may be better suited to using structured interviews or surveys.

Resource intensive

Some ethnography can be carried out in a matter of hours, but in most cases the best results come from spending considerable time in the field. Whether ethnography is viable will depend on what information is needed and the resources available. For example, if a payments company wants to know how customers decide how to pay at the point of sale, then a few hours or days may be enough to produce the insights needed. However, observing customers' financial management from month to month would require a much longer study, with many more hours spent in the presence of the customer.

Case Study 1

OBSERVATIONS OF CASH USE IN ETHIOPIA

Observations of people's behaviour can provide information that is not accessible through any other method.

Researcher Woldmarian Fikre Mesfin used participant observation to collect data on open-air cash transactions in fourteen different marketplaces in Ethiopia.²⁴ Markets are busy places, and so buyers and sellers depend upon short cuts in order to make transactions quickly.

Moreover, most of Mesfin's research participants were functionally illiterate and could not read the numbers or text on banknotes. He paid particular attention to:

- Shortcuts buyers and sellers use to quickly tell currency values apart
- Errors made by sellers in their calculations
- How sellers divided up cash into different piles to assist their accounting

By focusing on these areas, Mesfin aimed to identify the common practices that merchants (sellers) and buyers (customers) perform

Method

Mesfin used observation techniques to collect data on how people counted, stored, and transacted with cash. He recorded these observations using a combination of field notes, photography and video (where appropriate).

Mesfin explained to us the benefits of observation:

- It helped him to quickly understand what respondents say about their practices
- It enabled him and his respondents to reach common understandings, since they could point to concrete details, such the design features of money or bags
- Observation tended to raise new questions that may not have come to mind through other methods

To confirm his observations, Mesfin also conducted interviews with his research participants. He cross-checked the data generated by each method (known as *triangulation*) to ensure he had not misunderstood what was occurring. Mesfin's research is an example of a multi-method study.

Findings

Mesfin discovered that buyers and sellers identify currency notes of different values according to their colour rather than by the numbers printed onto them. This is a common practice in many countries, especially in those that have brightly-coloured notes such as Ethiopia.

However, these kinds of short cuts did not prevent errors of calculation. Due to time constraints and crowding, sellers were not always sure who had paid them or whether change was due.

Observations permitted Mesfin to track the different methods of accounting sellers used. Some sellers preferred to use a single bag for their money, whereas other sellers had a separate bag for each type of item they sold.

For example, money from the sale of coffee would go into one bag, and money from the sale of salt would go into a second bag. When they provided change for an item, they would take it from the bag corresponding to that item.

Research participants admitted that this system sometimes made transactions overly complicated, but there were a few reasons why it was preferable. One was that when all of a seller's money was stored in one single bag it was at greater risk of theft. Another was that, in the absence of written records or cash registers, storing money in separate bags helped them to keep track of product movement:

“Keeping these sales separate enables them to easily know the daily sales from each item, the net profit of each item and the most profitable items in their portfolios.”²⁵

While research participants could potentially explain these behaviours in interviews, observation overcomes many inaccuracies introduced by human recall or omission.

Applications

Insights such as these could be used to inform the development of new money-management products, such as a mobile money service that includes built-in features suitable for local contexts or particular users. For example, a mobile money service aimed at sellers could provide multiple wallets connected to the one account. This would allow users to continue to divide up cash into multiple piles.

Ethical issues

As with many studies of money, Mesfin told us that he encountered privacy issues regarding collecting this data:

“Sometimes, as related to money, respondents do not feel comfortable opening up their money bags and let you see. If their bag contains little money they feel shame.”²⁶

However, since Mesfin spent a significant amount of time in each research site, he developed trust and even friendship with the sellers in the market. He also says that if people saw others showing him the content of their bags, they felt confident to talk with him and show him their bags.

Case Study 2

USING LONG-TERM ETHNOGRAPHY TO UNDERSTAND DEBT IN GUATEMALA

Some topics in consumer finance are difficult to research because the information is private, widely dispersed, or not recorded in any form. Ethnographic research can assist in overcoming these barriers because researchers piece together data from a wide variety of sources.

Ethnographers often revisit the same place for years, or even decades, to carry out different research projects, meaning that they get to know a place and its people in detail. This makes it easier to identify how financial behaviours fit into larger social, cultural, and economic patterns.

A good example of this is David Stoll's research in Guatemala. Stoll has been carrying out research on political and economic issues in the highland Maya market town of Nebaj since 1987. In his book *El Norte or Bust! How Migration Fever and Microcredit Produced a Financial Crash in a Latin American Town*,²⁷ Stoll describes how he watched Nebajenses become over-indebted as they speculated on migration to the United States.

Stoll investigated the motivations behind people's decisions to take on debt, inter-group lending practices, and the role of microfinance agencies in stimulating the community's debt bubble.

Method

Stoll carried out long-term ethnographic fieldwork, beginning in 1987 and generally returning to the field every year. Some of these trips were made to carry out a concrete research agenda; others were simply to visit and keep in touch. Stoll reports that long-term fieldwork had two advantages:

- It permitted him to stay connected to residents, building up trust and recognition
- It allowed him to observe how the community and its institutions changed over time, including generational change

Stoll's research turned to the problem of indebtedness in 2007 when he discovered that residents were becoming heavily indebted to microfinance institutions, banks, moneylenders, and each other. Finding out why people were taking on so much debt involved:

- Interviewing residents about their borrowing and lending
- Observing interactions between family members, neighbours, and institutions
- Working with a debt committee to tabulate the experiences of its members

Stoll's initial research involved trying to discover why people were becoming so indebted. As the picture became clearer, his research questions became more numerous and more specific, focusing especially on understanding why people would take on the risks associated with borrowing and lending.

Findings

Stoll's initial finding was that a drop in remittances from the US was causing more people to default on their loans. As defaults rose, the town's lending institutions stopped making new loans, and defaults rose even higher. The price of local real estate, which had inflated enormously, suddenly collapsed.

Many households were taking on debt to fund illegal migration to the US. From their onset in the late 1990s until 2006, the majority of these ventures had been successful. The families who stayed behind received money from their relatives who had migrated. Migrants were able to pay back the loans financing their trip and return with enough savings to buy a used motor vehicle, land or livestock, or to improve their homes.

From 2006 onward, migrants found it increasingly difficult to find enough employment in the US to pay for their trip, let alone send the remittances their families now expected. Strangely, these increased failures did not immediately deter other residents from taking on debt to migrate themselves. Instead of shrinking, the bubble grew bigger for another year.

Stoll found various factors that exacerbated risk-taking among borrowers:

- People were reluctant to believe that migration was no longer a successful strategy
- Even if they did recognise the risk, they considered it to be one worth taking
- Failed migrations meant that families would have to borrow even more money so that the aspiring migrant could make another attempt at crossing the border
- The only way of paying back loans was to take out more loans
- Some people took loans to lend to others in the hope of making a profit

Among lenders, Stoll found the following:

- People would lend to each other to fulfil social obligations or with the hope of making a profit
- Loan sharks charged high rates to cover the cost of the risk
- Formal lenders, such as microfinance agencies, were not aware that their loans were being invested in migration or third-party lending activities

Stoll reports that while he gained initial contacts through his local networks, strangers were also willing to talk candidly with him about their debts, admitting to their own faulty decisions as well as to instances in which they had been tricked or let down by others.

However, no one person or institution had a good sense of the entire picture. By combining interviews, observations and participation, Stoll pieced the story together.

Applications

Stoll's work has numerous applications in understanding and tackling over-indebtedness. Stoll reports that while in the field he was able to assist both individuals and institutions by:

- Helping one of the debt committees compile a list of problem cases
- Paying for a local radio spot warning against the resurgence of a particular swindle
- Paying some medical expenses for a crippled returnee
- Providing advice for what he warned were unrealistic pitches to NGOs

There are many ways in which Stoll's findings could be applied. For example:

- Knowledge of how debt is accumulated can assist regulators in deciding which kinds of institutions to license or in developing methods to combat loan sharks
- NGOs could use his insights to develop financial literacy programs that focus particularly on the assessment of risk, not just on how to choose and use products
- Microfinance institutions could adjust the processes by which they make lending decisions
- Retail banks and other formal financial institutions could develop products that take residents' collective financial behaviours into account as well as their individual behaviours

ETHICAL ISSUES

The fact that Stoll conducted long-term fieldwork meant that he was reasonably aware of the kinds of ethical issues that might occur. However, this did not guarantee that they could always be avoided. Stoll told us:

“The biggest ethical issue is my inability to provide financial assistance to the people who told me their stories. Even the smallest of the debts that were sinking them were on the order of \$1,000 to \$2,000 dollars. Per my human subjects protocol, I always introduced myself as an anthropologist whose job was to collect stories and publish books, not an NGO who could provide help. But because of the aura surrounding gringos, especially in a town upon which one NGO after another has descended, merely repeating this disclaimer did not vanish the hope that I might be able to help in some way.”²⁸

He continued:

“What I did do was help debtors communicate with local pro-bono lawyers; pay for physical therapy for a crippled returnee; and pay for a local radio spot warning against the resurgence of a particular swindle. I have also had my book translated into Spanish and circulated it via PDF to Nebajenses who have enough schooling to read it. I hope that it will encourage town authorities to discourage predatory money lending, crackdown on swindlers, and support victims through the legal system.”

Stoll's assessment highlights various ethical problems that researchers studying indebtedness might encounter:

1. Transparency about the aims and outcomes of research is an ethical obligation.
2. There may be a gap between what researchers say they do, and what participants think they do. This raises the possibility of unintentional coercion in which participants share information that they would not have otherwise given away.
3. Research on vulnerable populations that does not result in tangible outcomes has questionable ethical value in the eyes of the population being studied.
4. If participants receive only indirect assistance from the research, they may not associate this assistance with the research and may feel exploited.

It should also be kept in mind that ethical issues change throughout the course of research, especially in long-term studies. What is problematic at the beginning of data collection may cease to be an issue down the track, and vice versa. Care therefore needs to be taken to regularly assess current ethical issues.

More about the method

Practical Ethnography: A Guide to Doing Ethnography in the Private Sector by Sam Ladner (2014, Left Coast Press)

Research Methods in Anthropology: Qualitative and Quantitative Approaches by H. Russell Bernard (2011, AltaMira)

A Handbook of Practicing Anthropology edited by Riall Nolan (2013, Wiley-Blackwell)

Doing Anthropology in Consumer Research by Patricia L. Sunderland and Rita Mary Taylor Denny (2007, Left Coast Press)



Figure 5

INTERVIEWS

Interviews are underrated as a way of learning about people's financial behaviour. They are one of the most widely used methods in qualitative research due to their versatility, ease of execution, and the quality of data they produce.

While interviews are certainly used in industry, they tend to be overlooked in favour of shorter interviews or UX testing. They are used far more extensively in the academic and not-for-profit sectors. A variety of qualitative researchers are trained to conduct interviews, including sociologists, anthropologists, behavioural researchers, and user experience designers.

WHAT IS IT?

- Qualitative / quantitative
- Multiple techniques to choose from
- Face-to-face or remote data collection

Interviews are a standard method in qualitative research. The main types of interviews are *structured interviews* and *unstructured / semi-structured interviews*. Trained interviewers are necessary for both types, and the interviews will also need to be transcribed, coded, and analysed.

In structured interviews, interviewers write questions (the 'interview schedule') ahead of time and ask exactly the same questions of each interviewee. The purpose of this consistency is to avoid biasing how the interviewees answer the questions. Data is quite uniform, and interviewees' responses can be readily compared and analysed, giving them a quantitative aspect. For a comprehensive guide to structured interviews, see the *GAO Guide to Structured Interviews*.²⁹

In unstructured / semi-structured interviews, interviewers adapt their questions as the interview progresses. This allows interviewees to explore topics as they arise and ask new questions in order to elicit deeper information from the interviewee. This makes comparing interviews somewhat more difficult, because there is variation between the questions asked of each interviewee. However, there is plenty of coding software (such as NVivo) to help researchers find the most important themes in their interview set.

There are also many sub-types of interviews, including life histories, video interviews, place-based interviews, and interviews involving props.

STRENGTHS

First-person perspective

While quantitative data are often valuable in telling us what people do, they might not tell us why people make certain decisions or act in particular ways. People's descriptions of their own behaviour can tell us why they behave in certain ways and also what they think motivates their behaviour [see Ethnography].

Flexibility of location

Interviews can be carried out in many different locations, such as at home, work, school, cafés, over the phone, or over the Internet. In finance research, where the data being collected is often considered personal, choosing an appropriate location can assist in helping interviewees feel comfortable.

Versatility

Interviews are one of the most versatile research methods because different kinds of interviews can be used to achieve specific goals. Unstructured interviews give the interviewee the greatest control over the content. An interview may begin with a single planned question, with the interviewer

Examples of use

- Yong Ming Kow and his team used semi-structured and on-site interviews to understand the digital pathways of the success of AliPay and WeChat Wallet in playing, gifting, and ceremonial practices.³⁰
- Lim Zhiyang of Grab Taxi in Singapore used semi-structured interviews to understand customers' user preferences, including payment preferences.³¹
- Microsoft researcher Apurv Mehra and his team discuss how a combination of ethnographic and semi-structured interviews helped them design the loan payment app Prayana.³²
- FAIR money undertook a study of financial management among struggling individuals in Silicon Valley.³³
- IMTFI researcher Janet M. Arnardo researched how indigenous communities in the Philippines store money informally.³⁴
- Jonathan Donner and Camilo Tellez examined the adoption, impact and use of mobile financial services in their study of mobile banking and economic development.³⁵
- Barbara Stewart's *Rich Thinking* white paper series presents nearly a decade of interviews with women about their financial behaviour.³⁶
- Bruce Cahan of the Filene Institute interviewed representatives from credit unions to better understand the potential of their roles and services.³⁷

generating new questions in response to the interviewee's statements.

Life histories often take this format, but the approach can be used for any exploratory research. For example, asking a person to simply talk about their finances can lead to topics emerging that the interviewer may never have thought of asking about. Moreover, it allows the interviewee to discuss what they feel is important.

Interviewees can also use props or things in the interviewee's environment to start conversations on certain topics [see Object-Centred Methods]. Another approach is *cultural domain analysis*,³⁸ which involves asking interviewees to classify items in a list. This helps researchers to understand how interviewees order information.

Quantifiable

Interviews can be coded to add a quantitative element to the data (although they will probably not be statistically representative of a larger group). Developing a coding schema for open-ended questions and analysing the data using quantitative software can achieve this.

LIMITATIONS

Self-reporting bias

Interviews generally depend upon the interviewee to give an accurate account of their own thoughts and behaviour. However, while we are all experts when it comes to ourselves, studies show that we are unreliable at remembering facts. Interviews do not normally schedule time to make observations that could be used to cross-check verbal data. It can therefore be often advantageous to use interviews in conjunction with other methods.

Resource-intensive

Interviews generally require less research time than ethnography, but they still present significant costs in terms of collecting and processing data. Organising interviews and carrying them out is a time-consuming process. Transcribing interviews is an even more time-intensive process, as it takes around 4-5 hours to transcribe one hour of interview. In commercial work, recruiters are often used to assist with finding willing participants.

Design complexity

Depending on the research requirements, writing effective interview questions can require a high levels of skill. For unstructured or semi-structured interviews, researchers need knowledge of how to adapt questions while the interview is taking place. Structured interviews are meant to produce rigorous results, and questions must be carefully designed. There are many textbooks that discuss the theory and practice of writing interview questions.

Case Study 1

HOW HISPANIC AMERICAN COLLEGE STUDENTS LEARN 'GOOD' AND 'BAD' FINANCIAL BEHAVIOURS

Many consumer finance researchers have observed that people often do not appear to manage their money in ways that best suit their interests. This is partly because people may not have the financial skills they need to manage their money well, but it has also been suggested that people learn 'good' and 'bad' behaviours from those around them. But from whom do they learn, and how can positive financial behaviours be encouraged?

Marketing professor Kittichai Watchravesringkan wanted to find out how Hispanic American college students acquired financial skills.³⁹ Several research studies had indicated that Hispanic Americans are one of the groups that are most at risk of financial difficulties. However, the research did not really explain why this was the case.

Hypotheses have included that Hispanic Americans have lower educational attainment and are reluctant to engage in long-term financial planning. One survey suggested that this demographic group are suspicious of advertising and are reluctant to adopt new products and services that could assist them to manage their finances. Another study suggested that Hispanics have more present-oriented attitudes and are less likely to engage in delayed gratification.

Out of all these possible causes, which are the most important? Underlying all of them is a question of how people learn financial behaviours in the first place: who their 'socialization agents' were (family, friends, advertising, etc.). As Watchravesringkan explains:

“Consumer socialization refers to the process by which young consumers develop consumer-related skills, knowledge, values, and attitudes throughout their different life stages via the influence of socialization agents, such as family and peers.”

Studying how behaviours are formed, as well as individuals' motivations, deepens our understanding of why one demographic group might differ from others.

Method

To investigate consumer socialisation among Hispanic Americans, the researcher interviewed 11 college students who were 20-25 years of age. He focused on college students because Hispanic Americans demonstrate low levels of educational attainment due to financial constraints. All interviewees were either first- or second-generation Hispanic Americans.

Students were selected using a combination of a *convenience sample* and *snowballing* techniques. Care was taken to ensure that interviewees represented a range of study majors. Monetary incentives were given to interviewees to increase the rate of participation in the study.

Interviews lasted 60-70 minutes and were audio recorded. Interviewees were encouraged to talk about matters that they felt were important. The interviews began with 'grand tour' questions to collect general information before turning to financial management specifically.

Questions were kept quite general, focusing on how interviewees learned to manage their finances, their financial values, and their current practices. They included:

- How do you manage your finances?
- Are you currently satisfied with the way you handle your finances?
- How do you learn to develop financial skills?
- What kind of values may impact your financial management?

The interviewer then coded and compared the interviews to spot emergent themes. They showed a selection of their conclusions to the interviewees to get their feedback. Overall they found that students mostly agreed with the study's conclusions.

Findings

The researchers found that the students' financial behaviour was strongly influenced by their family members. Interviewees especially reported that they had learnt the importance of financial management and saving from their fathers. To a certain degree, students also learnt from their peers, television, or their religious communities. Students also said they were influenced by watching other people get into debt. In some cases, students watched others become over-indebted and copied their behaviour; in other cases, students learned not to follow the footsteps of people who became over-indebted.

Overall, the data suggested that whereas the interviewees learn 'good' financial behaviours from their families, they tend to learn 'bad' financial behaviours from outside their families (peers and media).

Applications

While this study was small, its findings are potentially useful for further research or program development.

In particular, the suggestion that family provides a positive overall influence is interesting because it contradicts common assumptions. Many social studies tend to assume that, if a behaviour is specific to an ethnic group, then it must be culturally learned through parent-child transfer.

Instead, the results of this study suggest that inter-group socialisation may not be a problem, but rather may contribute towards improving financial management, such as by developing programs that enhance the influence of families on financial behaviour. As the researchers explain:

“The results may aid academic administrators, financial counselors, and consumer educators in gaining a greater understanding of this particular college segment and finding means to develop effective outreach programs geared toward this growing segment.”

Key to uncovering this insight was that interviews were relatively long and open form. This allowed the students the time and space to cover issues that they felt were relevant to them. In a more structured approach or a shorter time frame, these insights may not have been able to emerge.

Ethical issues

This study raises various ethical issues that merit consideration. One of these concerns snowballing, a method of recruiting participants to a study by asking already-enrolled participants to suggest people they know for recruitment. It is especially useful when working with groups that are difficult to access.

There are some reservations about this method because there is a danger that participants may not feel that they can refuse to assist the researcher. Moreover, it can result in breaches of privacy. For more information on the ethics of snowballing, see the guidelines on the Boise State University website.⁴⁰

Monetary payments are often used to encourage participation in interviews. Some researchers argue that this is ethical because participants should be compensated for their time. Others raise concerns that financial stress may drive people to participate in research that works against their interests.

This is of particular importance in medical research that can have negative physical outcomes for participants. It is less of an issue in research that focuses on opinions, values, and self-reported behaviour (such as this study). An article posted on the NCBI website describes the ethical issues involved in paying research subjects.⁴¹

Cultural stereotypes can be reinforced or challenged by research that focuses on a particular social demographic, such as an ethnic group. This is known as *implicit bias* or *ingroup bias*.⁴² Poorly designed research can sometimes inadvertently reinforce stereotypes, such as when questions are not properly thought through. This study, by keeping questions open, maximised the ability of students to share their own perspective and limit bias in the research design.



Figure 6

Case Study 2

SOCIAL NETWORK ANALYSIS OF MOBILE MONEY IN KENYA

An interesting application of interview techniques is the analysis of social networks. Interviews can be used to collect data on networks, which can be analysed either qualitatively or quantitatively. Essentially, social network analysis is a self-contained mixed method.

Quantitative interview data can be used to map nodes and connections in social networks. The resulting visualisations are an excellent way to see clearly who is connected to who, and whether a social network is open (loose connections) or closed (close ties among group members).

Qualitative interview data can be used to explain what drives social networks. For example, interviewees can be asked to explain why particular connections exist, how they are maintained, and how they have changed over time. In other words, whereas the quantitative data tells the 'what', qualitative data tells the 'how'.

Social network analysis is particularly useful for studying patterns of circulation, such as remittances, conditional cash transfers, gifts, and other forms of payments. It is handy for analysing mobile money transactions in which users are often individuals who send and receive money for social purposes as much as for economic ones. It has the advantage of showing not only who is connected to who, but also in demonstrating how and why money moves across large geographic areas.

Sibel Kusimba and her colleagues conducted a study of mobile money in Kenya, where at least 60% of adults are unbanked.⁴³ Mobile money was launched in Kenya in 2007 and is widely recognised as the world's most successful mobile money service. It offers person-to-person transfers, a merchant payment service, and a basic means of saving money. In November 2012, a related service called M-Shwari was launched that offers basic savings accounts and microloans.

Kusimba and her team were interested in discovering how rural Kenyans were networked through mobile money and the reasons why they sent money. The researchers wanted to find out whether common assumptions about mobile money—that it empowers individuals, stimulates entrepreneurship, and reflects rural-urban migration patterns—reflect Kenyans' experiences of using mobile money services.

Method

Kusimba and her team undertook research in rural Kenya in 2012. They conducted participant observation, interviews, and survey questionnaires with more than 300 Kenyans, 80% of whom were farmers. The team also conducted interviews with a smaller sample of Kenyans living in Chicago.

The team carried out different kinds of interviews to elicit qualitative and quantitative data. 'Intercept interviews' were accomplished by walking through the main marketplace. Kusimba 'intercepted' people, asked them if they wanted to

answer a few questions, and then gauged how much they wanted to talk about the topic.

While the resulting sample was not representative, Kusimba notes that it is a good way to canvas general opinions and identify people who are interested in taking part in a more formal study. Because Kusimba had been working in the geographic area for 20 years, she already had contact with a number of families who were receiving remittances. She therefore recruited people for interviews from both this familiar group and from her new contacts made through intercept interviews.

In-depth interviews provided background and contextual information about people's experiences, feelings, social lives, and economic practices. Kusimba notes that the advantage of the in-depth interviews was that the quality of information they received was high. A disadvantage was that the interviews often required a great deal of time and several visits in order to achieve rapport.

During interviews, the researchers drew up kinship charts. In order to draw the networks they asked interviewees to tell them who they had sent money in the last year, and who had sent them money.

For the quantitative part of the study, the team interviewed between 3-10 individuals from 14 families. Each interviewee was asked to name all of the relatives that they had sent money to, or received money from, in the previous year. Most interviewees had sent money to between five and nine people.

Where possible, the researchers then contacted the individuals who had been mentioned and approached them for an interview as well. They entered the resulting matrices into R, statistical computing software that can be used to draw social networks diagrams.

Kusimba and her team asked people to list the names of people they had transacted with rather than the amounts of money they had sent. There were two reasons for this:

1. People tended to be inaccurate in recalling quantities of money.
2. Many people did not like to talk about money directly. This was especially the case with men, who would organise large ritual ceremonies that could cost up to 26,000 Kenyan shillings. Whereas women would admit that they asked family and friends for financial assistance, men preferred to say that they had collected debts owed to them.

Kusimba notes that, for her research, the primary benefits of social network analysis were:

- Visualisations helped them to clearly see and analyse the connections in a way that is difficult or impossible with ordinary interviews
- They could tell which networks were 'open' or 'closed'

- They obtained a sense of who was 'brokering' the gaps in networks
- As SNA is a statistical technique, the networks could be examined in terms of size, number of ties, and other parameters

She explained to us:

“Social network analysis is good because it reveals different kinds of social relationships. It also provides quantitative assessments in terms of size and number of ties. These can also become apparent through ethnographic interviews but SNA makes it clearer. We need both because the ethnographic interviews give context. It’s also good to follow up SNA and do another study in a few years (or other appropriate time frame) because then you can see the social network change.” 44

Social network analysis has limitations as well as benefits. Like any model, it simplifies reality, collapsing a lot of information about family ties and obligations. People send money for a variety of reasons, including deep kinship ties, social obligation, or to repay a debt, but these differences are not generally visible in social network models. Whereas social network modelling shows what people do, in-depth interviews demonstrate why they do it.

Methodologically, networks drawn from interview data need to be treated as samples. People forget or intentionally omit their connections for various reasons. Like any other kind of ethnographic information, information needs to be verified wherever possible by talking to the people who an interviewee says they have sent money to or received money from. This sometimes yields contradictory information, but can also improve certainty as to the accuracy of data if different interviewees’ accounts agree.

SNA has become increasingly popular over the past decade or two. Kusimba recommends that qualitative researchers collaborate with experts in the method and in consumer science, noting that this can introduce qualitative researchers to a range of models and approaches that they might not be aware of.

Findings

The team’s combination of qualitative and quantitative analysis of social networks resulted in a wide array of discoveries. The social network visualisations that the study generated provide a valuable complement to the in-depth interviews. They show clearly that people’s networks are relatively dense and that there are many transactions between the people within them.

Family networks are based around siblings and mothers, and show a preponderance of matrilineal ties. These findings contribute to conversations about families, informal finance, social relationships, and ideas of reciprocity.

Many of the findings contradict common assumptions about how mobile money operates as a social and economic tool. Others illuminate how mobile money is used in rural Kenya. First, there is the assumption that primarily ‘individuals’ use mobile money to conduct person-to-person transfers or for their own particular purposes, such as saving money. In contrast, Kusimba argues that it is better to conceptualise mobile money as being used by collectives and groups.

Remittances sent by mobile money are used to strengthen social ties, especially among siblings and mothers, and as a way of contributing to social rituals such as funerals, weddings, and coming of age ceremonies. Moreover, a person who receives money will often re-circulate a portion of it to other family members and friends.

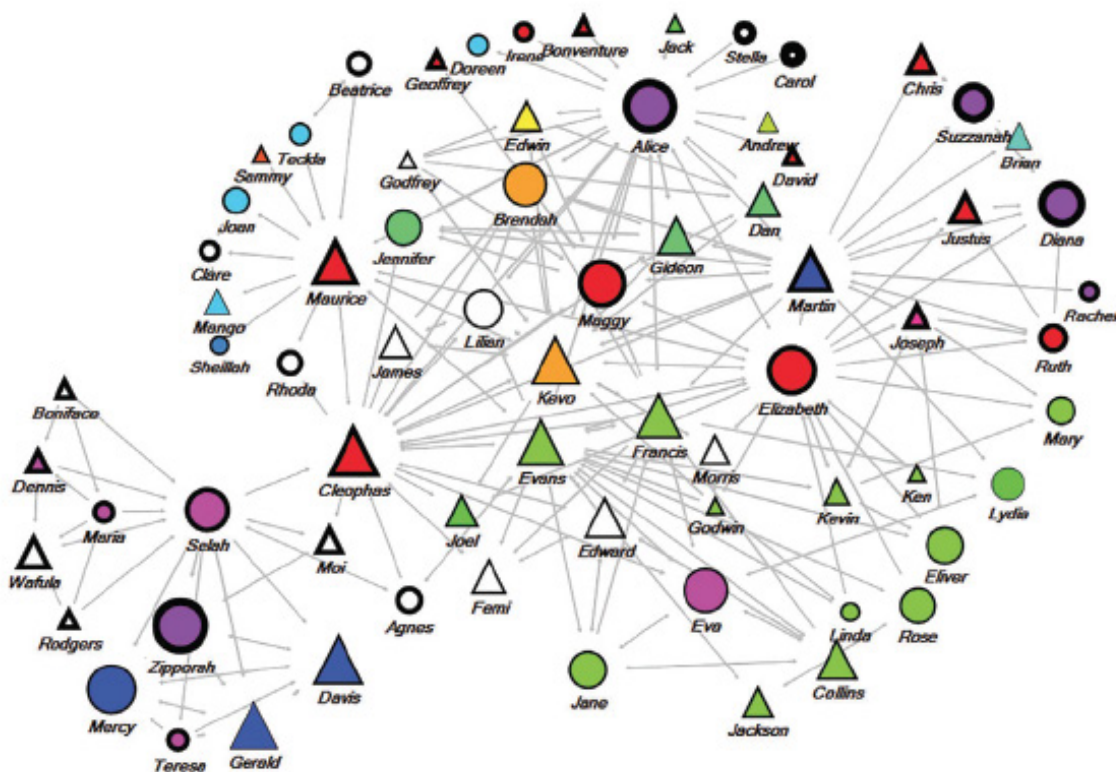


Figure 7

Mobile money helps to equalise access to resources within a family, rather than simply contribute to an individual's wealth. Indeed, while remittances are often assumed to flow from urban to rural areas, Kusimba and her team found that money flows in both directions.

Second, people who believe mobile money can combat poverty often represent the service as a tool that empowers people both socially and economically. This is often true, since sending money via a mobile phone can present a significant reduction in economic and transaction costs compared to other kinds of financial services.

However, Kusimba states that, "For the majority, mobile money is a way of reaching out to traditional economic support networks", not a tool to combat poverty. Furthermore, its functions and uses are sufficiently different from those of mainstream banking that it does not act as a close supplement. Kusimba argues that mobile money is better understood "not as banking but as adjunct to the mobile phone," since the practice of sending and receiving money is closely connected to that of speaking or texting.

Third, mobile money is often seen to benefit women. Mobile money incurs advantages for women because it provides a way to make transactions privately, and this can help women gain some autonomy from their husbands and other men. Mobile money gives individuals more control over their social networks, allowing them to both create and sever connections.

Yet, as Kusimba notes, while women tend to receive a large share of remittances, they often view mobile money as something that helps them cope rather than that empowers them. This is because most wealth is tied up in land and stock, which are predominantly controlled by men.

Fourth, an ethic of generosity places pressure on people to recirculate remittances, and this can be seen as a burden. People grow weary of constant requests for money and may stop answering their phones at times when requests have a high frequency, such as before the beginning of the school year. People avoid storing money on their phones out of fear that it will lead to large purchases or the inability to say no to requests for money.

In fact, Kusimba explains, there is a growing sentiment that Kenyan social life is becoming overly monetised. Aside from the burden of giving, some urban workers will send money to their rural homes rather than return in person to participate in rituals. This is altering the structure of social life.

Applications

Combining in-depth interviews with social network analysis has many potential applications. For example, when we think of remittances we often picture urban migrants sending money home to their rural families. However, social network analysis can bring this assumption into question and show the underlying logic of juggling many ties that informs people's money decisions.

Comparison with other areas of the world may uncover contrasting cultural dynamics around money sending. This kind of research is likely to be of interest to money transfer companies

that need to understand money culture and practices in different markets. It may also help policy makers, especially since it emphasises the importance of groups in mobile money use.

Ethical issues

Privacy is always an issue when it comes to networks. When an interviewee named a contact, Kusimba and her team generally tried to follow up to see if the named person was also interested in participating in the study. Some follow-ups declined to take part, and it was important not to make them feel pressured into participating.

Some people gave contradictory information in terms of the size and frequency of the remittances they sent and received. There were people in the study who sent remittances secretly and did not want them to be a part of the network visualisations. In general, says Kusimba, East Africans are quite open with information, but some of their mobile money use can be illicit. The researchers often omitted information if it could not be verified by at least one other person, usually the recipient/sender, or if the inclusion of personal information had the potential to cause harm to the participant.

While such problems were anticipated, they did limit the data that could be collected and the ability to visualise complete networks.

More about the method

InterViews: Learning the Craft of Qualitative Research Interviewing by Steinar Kvale and Svend Brinkmann (2009, SAGE)

'Asking questions with reflective focus: A tutorial on designing and conducting interviews' by Arsel Zeynep (2017, *Journal of Consumer Research* 44(4): 939-948)

'Pixelated partnerships, overcoming obstacles in qualitative interviews via Skype: A research note' by Sally Seitz (2015, *Qualitative Research* 16(2): 229-235)

Handbook of Narrative Inquiry: Mapping a Methodology by Jean D. Clandinin (2006, SAGE)

Analyzing Social Networks by Stephen P. Borgatti, Martin G. Everett and Jeffrey C. Johnson (2013, SAGE)

OBJECT-CENTRED METHODS

Research using objects and the material environment as prompts and talking points is common in commercial research that informs product design and marketing. It is sometimes called participatory design and is part of a suite of approaches applied in user experience research, design research, and service design.

In this toolkit we use the term 'object-centred methods' because it is not always used as part of a design process. It is also used to simply understand people's behaviour, especially by researchers doing academic research or policy research. The method is less frequently used in these areas, but is gaining traction because it is a highly effective way to encourage participants to talk about specific topics.

The method has been applied to many kinds of consumer finance problems, such as on how objects (money, credit cards, wallets, etc.) prompt specific behaviours, including decision-making, household financial planning, and financial consequences.

Interactive objects are things that the interviewee handles, manipulates, or produces during the interview. Asking participants to handle objects, sort cards, or draw diagrams can elicit feedback on design and prompt interviewees to share useful information about their practices that may not emerge during a verbal interview.

WHAT IS IT?

- Qualitative
- Uses props and other material objects in interviews
- Face-to-face or remote data collection

In object-centred research, participants are invited to engage with a particular object or with their environment. Researchers may ask the participant to talk about something they can see, hear, or feel. For example, props can be incorporated into a verbal interview to prompt conversation on particular topics. The interviewer may introduce objects, such as a product prototype or flash cards, or they may ask the interviewee to talk about their own possessions, such as the contents of their wallet or the devices they use for banking.

The objects being discussed may be static or interactive. Static objects are things that interviewees are asked to comment on, but not interact with, such as a printout of a new website. Questions may focus on the object's use, design, appeal, or particular features. Flash cards, photographs, video, money, credit cards, and even sound can all be used as static objects in interviews.

STRENGTHS

Assist in generating discussion

People are usually not accustomed to talking in detail about their use of financial tools and services. Props can help the interviewee to open up about their behaviours. They can also help interviewees to stay on topic by providing a point of focus. For example, interviewees may find it easier to show the interviewer the contents of their wallet than to recall all the money-related items they carry.

The method also provides the researcher with an opportunity to ask about objects that the interviewee has overlooked. Whereas the interviewee may only point out items they associate with financial management, such as cash and credit cards, an interviewer may also need to know about other kinds of money, such as store cards, or secondary items such as identification documents and receipts

Examples of use

- Polish researchers Mateusz Halawa and Marta Olcoń-Kubička used Excel spreadsheets as prompts to study 28 Polish households' budgeting and money management behaviour.⁴⁵
- Sociologist Helen Holmes looked at the practices of everyday thriftiness by examining consumption practices around the house and activities involving shopping, cooking, and repairing objects.⁴⁶
- IMTFI researcher José Ossandón showed how people use credit card invoices to track funds by way of 'accounting in the margin'.⁴⁷
- Anthropologist James M. Acheson used a 'pile sort' technique to classify expenses in household budgets in Mexico.⁴⁸
- In his book, Joe Deville shows how credit card statements and debt collections letters prompt customers to make payments.⁴⁹

Clarify the meaning of interview questions

The meaning of interview questions is not always clear to interviewees, and using visual / textual aids can help the interviewee understand exactly what is being asked. For example, when interviewing a person about their use of spreadsheets for budgeting, being able to point directly to a particular item in the spreadsheet and ask a question about it can save time and confusion. This technique may be especially useful when interviewing children as it can help them to understand what the interviewer is asking them.

Discuss specific features of objects

Props allow for the specific features of an object to be discussed. For example, an interviewer might ask a customer to demonstrate how they use their mobile phone to send money and comment on the steps involved as they are carried out. This gives the interviewee a chance to explain what they do and don't like about the functionality and aesthetics of the object, and to identify any stumbling blocks.

For example, asking a person to physically count money may assist in understanding precise aspects of financial literacy, so long as the interviewee is not made to feel that they are under examination. Asking an interviewee to explain which of their bank cards they like the most can show whether aesthetic appearance is important to the user, or whether their preferences are shaped by other considerations.

Assist in information recall and accuracy

Consumer finance research often requires interviewees to recall details about their financial transactions and the products they use, but much of this information is either never memorised or is difficult to recall. Props such as wallets, credit cards, and bank statements help us to recall information that is recorded on the props themselves or that is in our memories.

For example, asking an interviewee who regularly sends money overseas to show you their receipts will confirm the dates on which they made transactions.

Similarly, interviewees may have multiple retirement funds and forget where their money is saved. Going through physical documents can help them to reconstruct a picture of their finances. Using objects to improve information accuracy helps to counter a range of limitations of verbal interviews.

Produce user-created data

Researchers can ask interviewees to draw maps, diagrams, and other illustrations that can be used as data. This user-created data can be highly valuable in cases where interviewees feel they are better able to represent their thoughts and behaviours visually rather than verbally. This data can be saved for analysis by either photographing them or keeping the physical object (with the permission of the participant) [see Case Study 1]

LIMITATIONS

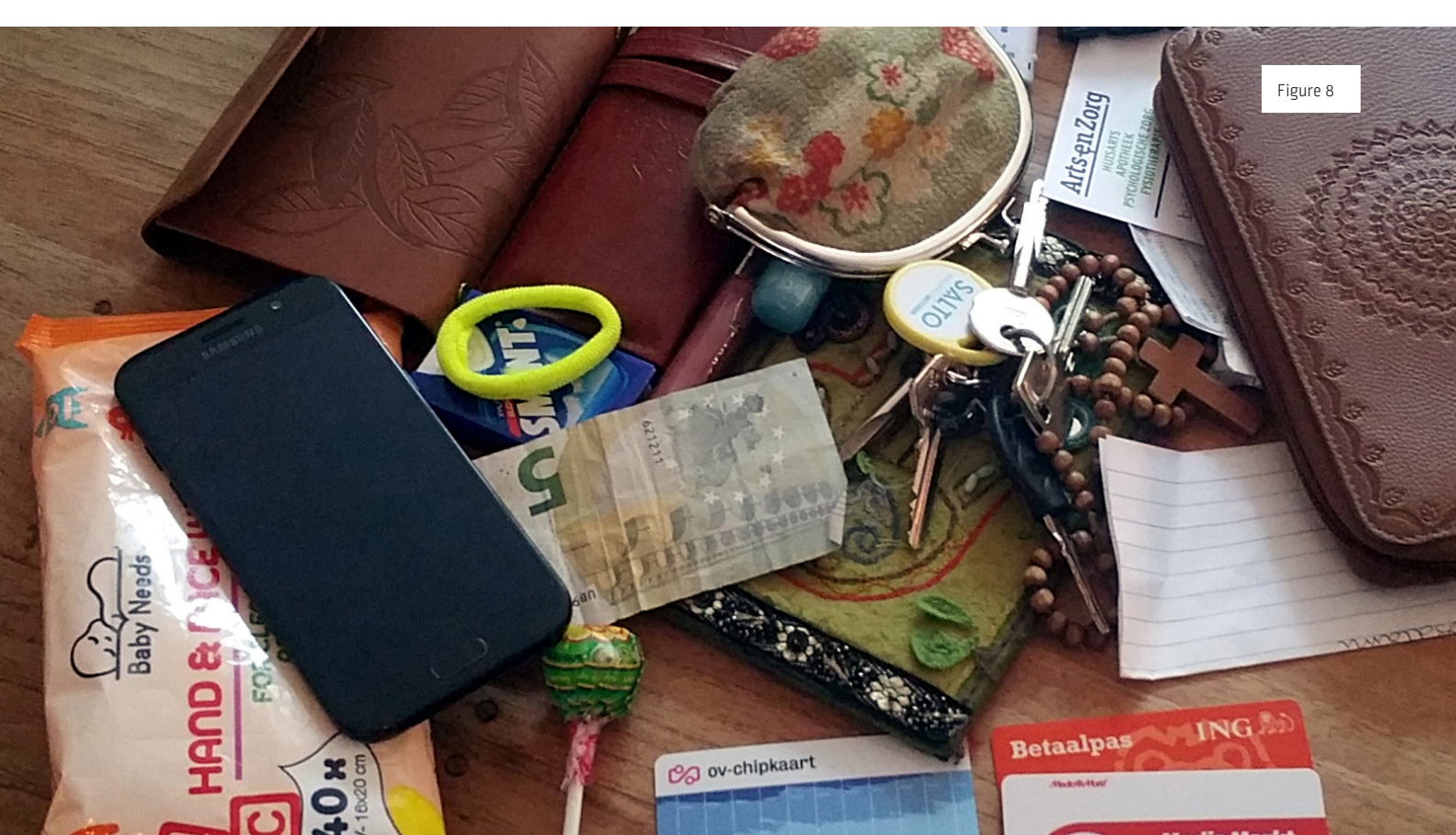
Self-reporting bias

Like ordinary verbal interviews, object-centred methods can involve self-reporting bias. Where possible it is a good idea to collect other kinds of data, such as observations or digital records of activities, for cross-checking.

Resource-intensive

Object-centred methods can sometimes be more resource-intensive than verbal interviews, depending upon what needs to be achieved. First, planning needs to go into selecting, and possibly creating, appropriate props. Second, object-centred methods are more likely to require additional recording means, such as video cameras or screen capture software.

Figure 8



Case Study 1

USING OBJECT-CENTRED METHODS TO UNDERSTAND FINANCIAL MANAGEMENT

Untangling personal finances can be a complex research task. People often have multiple income streams, combine incomes, or help manage the financial situations of family members. Business records may or may not be kept separate from personal finances.

Moreover, people do not necessarily keep all their financial information in the one place. As a result, trying to gain a comprehensive view of a household's or individual's overall financial picture can be difficult to achieve.

As part of a study of financial practices in the San Francisco Bay area, Jofish Kaye from Yahoo Labs and his team conducted a preliminary study with fourteen interviewees, aged 26-29, with incomes ranging from USD \$18,000-US \$150,000 per year.⁵⁰

The researchers incorporated multiple object-centred exercises to try to piece together a picture of their financial management. Their paper, 'Money talks: Tracking personal finances', describes the study in detail. Here we summarise their methods and findings.

Method

Kaye and his team wanted to explore the range of ways in which people keep track of their finances. They designed an interview structure that incorporated a range of static and interactive objects, including:

- Financial maps drawn by interviewees
- Financial calendars filled out by interviewees
- Index cards with text for interviewees to choose and discuss
- The contents of interviewees' wallets
- Guided tours of interviewees' homes
- Computers and mobile devices used for financial management

Kaye and his co-authors note in their article that a limitation with designing this study was that, because finances are generally considered to be private in the United States, it was not possible to test the methods beforehand with their friends, family, or colleagues. This meant that the interviews became the testing ground for the method.

The team interviewed 15 people with a range of different incomes, employment situations, and demographic factors. To begin recruitment they sent an email to people who had previously volunteered in their studies and asked them to fill out a short survey.⁵¹ Participants were selected from this group.

Each interview took place in the interviewees' home and was attended by at least two researchers. The interviews took around 90 minutes each. They began with general questions about the interviewee's employment, sources of income, household composition, and so on (see the study protocol for

more details⁵²).

Given that privacy is a major concern in financial research, the team wanted to quickly find ways to break the ice and make interviewees feel comfortable. To achieve this, they introduced an exercise that was "something that people couldn't get wrong": drawing a 'map' of their finances.

The researchers emphasised that there was no 'right' way to map their finances and that it was entirely up to them what they drew. Interviewees drew a variety of illustrations, including pie charts, pictures, and cartographic-style maps of where their financial transactions took place. The researchers report that this helped people feel that they were in control of the interview.

Next, interviewees were presented with sixteen handwritten index cards. In a book chapter on the study, Kaye explains:

"...each of [the index cards] had a event with financial consequences written on it: college, debt/bankruptcy, unexpected windfall, unexpected expense, employment, move, family change, retire, travel, birth, divorce, marriage, death, medical bills, buy/sell home, graduate. We put these out in no particular order and asked our interviewee if any had had a financial impact on them recently."⁵³

Interviewees were asked to select and comment on two of the cards, although they report that some interviewees decided to discuss all of the cards. Kaye commented:

"We found the index card method remarkably powerful. I've never seen something that was quite so generative. We were concerned that maybe it meant that we'd limit people's discussions to only the financial things we expected to talk about, but I think because we were really careful to make sure that we included some pretty open-ended categories ('unexpected expenses') it ended up being really useful."⁵⁴

This is a good example of how props can be an effective way to encourage participants to overcome their shyness and prompt discussion of topics that may not occur to them.

Next up, interviewees were asked to empty out the contents of their wallets or purses and talk about the items in them. They found a wide variety of payment cards in people's wallets, including credit cards, debit cards, store cards, and gift cards. Where necessary, they anonymised objects by placing pieces of Post-it notes over identifying details, then photographed them in order to have a reference for analysis.

This was followed by guided tours of interviewees' homes. Financial management can occur in many places: people keep documents in filing cabinets and in places where their presence will prompt them to take action; they use computers and mobile devices to manage accounts, budgets and spreadsheets, and they may store cash in common or secret places. Interviewees were also asked to show the researchers the digital tools that they use to manage their finances, such as a mobile device or a computer, including online banking, spreadsheets, applications, and programs.

Looking at where people keep financial information and mo-

ney-related objects helped the researchers to get a sense of how people tracked their finances and to what extent they integrated management of different aspects of their finances.

Throughout the interviews, interviewees were asked a range of specific, general, and hypothetical questions. These included how they had learned about finances (financial socialisation), what they would do if they received an unexpected windfall, what they wouldn't want anyone to know about their finances, and finally, what else the researchers should have asked them about.

Data were collected using a voice recorder, a still camera, and through old-fashioned note taking. Interviews were externally transcribed and photos were further anonymised if necessary.

To analyse the data, multiple reviewers tagged themes in the transcripts. In order to aggregate the themes the researchers wrote them up onto Post-it notes, accompanied by sketches and photographs. They then sorted and summarised the notes, generating a list of fourteen meta-themes and design opportunities.

Findings

Overall, Kaye reports that this study gave them a 'big picture' view of people's practices, provided a talking point to return to throughout interviews, and perhaps most importantly helped people to feel comfortable with the research.

The researchers note that the study sample was small, with just 15 interviewees, and is not representative of the United States let alone the rest of the world. However, in terms of specific details, their work provides insights into the range of ways that people manage their finances and is a useful basis on which to build a larger research project.

Few of the interviewees had a comprehensive idea of their own financial situation. In fact, many reported keeping their financial information in their head. As Kaye and his co-authors recount:

“The most common tool that people used to keep track of the overall state of their finances was nothing at all.”

Even in cases where interviewees used computer programs, mobile device applications, computer spreadsheets, and paper-based accounts to track financial flows, they rarely tracked every aspect of their finances. For example, one photographer tracked her business expenses but not her personal ones, and a mother tracked her college-aged children's credit card use but did not track details of her own expenditures.

The researchers point out that interviewees engaged in behaviours that seem 'irrational' if considered from a purely financial perspective, but which make sense when other social norms and values were taken into account. They explain, “People make financial decisions based on their emotional, historical, familial, and personal backgrounds in addition to financial considerations.”

As an example, one of their interviewees was a woman called Bonnie whose parents both survived the holocaust. She is so thrifty that she will rarely spend USD \$1.25 on a cup of coffee, but she is considering spending USD \$3,000 to give her USD

\$5,000 1985 Nissan 300ZX a new paint job. Kaye notes that this move would be “based on some factor other than optimizing financial gain. It seems clear this car has emotional value that exceeds its financial value.”

Another interviewee, Doug, used a system of index cards to cross-check the interest he was earning on his USD \$1.2 million investment in municipal bonds. In fifty years he had only ever found one small error. The opportunity costs of the time spent checking for errors had never paid off, nor would it likely pay off in the future.

Some of the most interesting findings concerned how people divide up their money into separate pots. Many social scientists, including Viviana Zelizer and Wolmarian Mesfin [see Ethnography], have noted that this practice is common in many places around the world. It can take the form of dividing personal funds from business funds, or engaging in goals-oriented savings for personal use. For example, some people might have a bank account specifically to save for holidays, or a coin jar to spend on leisure activities.

As examples of dividing funds into pots, Kaye and his co-authors describe three female interviewees who both run small businesses. One maintains a strict divide between her personal and business expenses, keeping paper accounts and sticking paper labels onto credit cards so that she can easily tell which are for personal use and which are for business use. The second interviewee keeps most of her accounts in her head and retains some fluidity between her personal and business funds. The third has a salaried job but has multiple other small income streams from what are essentially informal micro-businesses.

These examples suggest that while people do separate funds, they may not do so in ways that we would expect. Some people may be less concerned with separating business and personal expenses, and more concerned with maintaining divisions that are meaningful to them, such as separating out money to pay for a wedding or for college.

Overall, this study indicates that people's methods of financial management are dictated by what is important to them, and may have little or nothing to do with optimal financial decision-making. When trying to understand people's financial behaviours, then, it is important to explore their motivations.

Applications

Although the sample size was small, this study has numerous potential applications. Given that the interviewees were not using existing systems for financial integration, the authors suggest that there are opportunities “for rethinking those systems, but also for the design of novel financial interaction experiences.”

Most of the interviewees in this study checked their bank balances on a daily basis, often multiple times per day. Features could potentially be built into online accounts that capitalise on this behaviour, such as showing “prompts for good financial behaviour”. Another idea emerging from the study is to allow people to have multiple savings accounts that they can earmark for different purposes.

This kind of research could also be incorporated into the design of financial literacy programs and other interventions aimed at improving financial behaviour. Clearly, people's financial concerns do not line up neatly with what financial planners would advise them to do.

Learning formal financial management is a useful, and perhaps indispensable, life skill, but financial well-being does not arise from financial health alone. Rather, financial well-being occurs when people are able to achieve the financial goals that matter to them personally. As well as teaching people generic financial skills, financial literacy programs could help people to achieve their goals. In fact, focusing on goals may help motivate people to learn financial management techniques that would otherwise not interest them.

Ethical issues

As with all consumer finance research, privacy issues can be difficult to navigate in object-centred methods. In this study, the researchers decided to anonymise as much personal information as possible during the interview, rather than wait until it was completed.

All objects with personal information on them, including spreadsheets and the objects in people's wallets and purses, were anonymised before photographing them by sticking Post-It notes over names and any other identifying details.

The researchers contend that this is a far more reliable and efficient way to protect participants' privacy than trying to anonymise photographs later. They do not believe that it reduced the quality of their data as the details lost were not integral to the insights they wished to gain.



Case Study 2

A PORTABLE KIT STUDY OF POVERTY AND PERSONAL FINANCE IN HAITI

A portable kit study is a method of interviewing people about the objects they carry with them away from home. Studying the financial tools that people carry with them on a daily basis as they work, shop, and socialise helps us understand how they meet their financial needs.

People need to have financial tools on hand to navigate everyday and unusual transactions. This can be as simple as carrying cash or cards, but there are many other financial transactions that people undertake away from home, including debt payments, money transfers, and re-charging phone credit.

Erin B. Taylor and Heather A. Horst did a study of mobility and finances among Haitians living on the border of Haiti and the Dominican Republic.⁵⁵ The towns of Anse-à-Pitres (Haiti) and Pedernales (Dominican Republic) are right next to each other and many Haitians cross the border daily to shop, work, socialise and access services.

Haitians living in the region access financial and other services on both sides of the border. One of the goals of the research was to learn how this financial binationalism affected their economic and social lives. After three months conducting interviews, observations, and a questionnaire in the region, Taylor and Horst carried out a 'portable kit' study with a subset of ten interviewees.

Method

Participants in the study were all of Haitian nationality, and one interviewee had dual Haitian/Dominican nationality. Participants for the portable kit study were mainly recruited from among people the researchers had already interviewed and / or surveyed.

In most cases, background interviews had focused upon employment, family, impressions of the border region, and access to technology and financial services. Completing the portable kit study at the end of the research meant that the team had built up rapport with a sizeable number of people and could be sensitive to issues of privacy.

Approximately half of the interviewees were living in the Dominican town of Pedernales, and the other half were living in the neighbouring Haitian town of Anse-à-Pitres. Most respondents crossed the border on a regular basis. Their income ranged from zero to around 5,000 pesos per month (USD \$111).

All of the portable kit interviews were conducted in Spanish, as it was the main shared language among the research team. While it would have been preferable to conduct a number of the interviews in Haitian Creole, all but one of our interviewees spoke fluent Spanish. This is common among most Haitians living on the border of the Dominican Republic.

In preparation for the study, the researchers asked participants to bring with them everything they carried on a 'normal' day. Most of the portable kit studies took place in a quiet area of a

local hotel on the Dominican side of the border, as this created greater privacy for interviewees and fewer disruptions than carrying out interviews in their homes.

The portable kit interviews began with the researcher explaining the purpose of the research and the method. If an initial interview had not previously been conducted, they started the portable kit interview with a set of background questions.

To begin, the researchers requested that participants take all of the objects they carry with them out of their bags, pockets, and wallets, and display them on a flat surface. This included objects related to consumer finance (currency, cards, receipts) and other items (identity documents, photographs, face cloths, pens, etc.)

Interviewees were invited to discuss the objects generally. The interviewers often began by asking about the bag or wallet itself: where it had been purchased, why they chose that particular item, and whether they own other bags that they switch between depending upon their plans for the day. The benefit of this initial step was that it gave participants a chance to relax and provided an opportunity to build rapport.

Then the interviewees were asked to divide the objects into two piles: one of objects that they must carry with them every day, and a second pile of objects that could be left at home. The interviewees were asked to explain why some items were more important than others.

This step was crucial in identifying what people felt they needed to navigate their everyday lives. As the interviews progressed, the interviewers formulated questions that would tell them how different objects were involved in personal and household finances.

The portable kit interviews were recorded using an audio device, a video camera, and a still camera. Interviews ranged from forty-five minutes in the case of one participant who had already been interviewed multiple times and did not carry many items, to three hours for people with many items or an unusually extensive collection of phones and SIM cards.

The interviews were semi-structured: while the researchers followed the same general process for each interview, they also followed particular topics based on what their interviewees told them.

Interviews were transcribed by research assistants and translated into English. The researchers then went through the interviews to tag key themes. Video footage was summarised, particularly noting visual aspects such as the condition of money, branding on cards, mobile phone personalisation, and so on.

Findings

The portable kit study enabled the researchers to understand how people living on the border used financial services in their everyday lives. The objects people carried with them reflected both this formal financial environment and alerted the researchers to a range of other, less visible financial practices.

Interviewees carried a range of items relating to finances from both sides of the border, including different currencies, credit

cards, receipts for money transfers, bank documents for debts, and mobile phones used in transactions. They also carried items such as house keys, photographs of family members, bibles, pens, paper, and mobile phones.

Most interviewees reported that their most important items were identity documents, followed by keys, cash, and their mobile phones. Without identity documents, we were told, “you cannot do anything”: it is impossible to collect a money transfer, buy a SIM card, or even use many services. Moreover, interviewees felt that the Dominican police could harass them if they did not carry their identification with them.

Cash was the second most important item. Whereas Dominican pesos are accepted throughout the Haitian town of Anse-à-Pitres, Haitian gourdes are not accepted in the Dominican town of Pedernales. This means that Haitians must carry Dominican currency, whereas Dominicans will rarely (if ever) need to use Haitian currency. All of the interviewees carried Dominican pesos, but few carried Haitian gourdes. Interviewees reported that, when they crossed the border, they left their Haitian gourdes at home.

Interviewees were also asked, “How much money do you carry with you on a daily basis?” Responses ranged from 50 pesos to 500 pesos, but most were around 200-300 pesos (roughly USD \$4-7). This was enough money to pay for transport, food and drink, and other small expenses, such as topping up phone credit.

This question provided a sense of the cost of living as well as how much people felt they could afford to pay for items. It also led to further discussion of how the interviewees made a living.

For example, some interviewees explained to us that Haitians working in the Dominican Republic are often paid significantly less than Dominican citizens, although this depended somewhat on the time they had been living in the area and whether they had formed strong relationships with Dominican employers.

At the time of the research (February-May 2012), a microcredit bank called Fonkoze had just opened in Anse-à-Pitres, Haiti. Before this, there was not a single bank in Anse-à-Pitres, while there was a bank and a credit union in Pedernales, Dominican Republic. Using one of these Dominican banks required Dominican residency, so few Haitians had any bank account at all.

One exception was a woman called Bronte, who had both Haitian and Dominican citizenship, and was thus able to open an account in the credit union. During her portable kit interview, Bronte showed the interviewers her bank card and some papers. She explained that she had taken out a loan to buy her Haitian husband, Emmanuel, a motorbike so that he could start a microenterprise ferrying passengers and fetching goods for people (known as *motorconcheando*).

Bronte explained that they had nearly paid off the loan, mostly from her income as a receptionist in a local hotel. Bronte carried her loan documents with her because she considered it safer than keeping them at home, where multiple people (including children) had access to her house.

By focusing on all objects that people carry rather than just money-related ones, the study helped to identify the reasons why loans and capital investment might not result in significant increases of income. Emmanuel's income remains low despite their investment in his motorbike, largely because there are more men employed in this profession than there are customers to support their businesses.

In order to operate in Pedernales, Emmanuel had invested in a fake Dominican ID card. He reported that because he lived on the Dominican side of the border and lived with a Dominican-Haitian woman, the authorities assumed that he was also of dual nationality. This identification also saved him money, as he did not have to pay bribes to cross the border.

However, his fake ID did not fool the locals, who knew he was Haitian and would not let him join the Dominican union who coordinated this business in Pedernales. This meant that he could not wait for customers at designated motorbike stands, so he relied on a regular clientele (mostly of Haitians) that he had built up over time.

In the absence of banks, the interviewees used other formal and informal services to manage their money. The main formal financial products used by Haitians living in the border region tended to be the remittance services available on both sides of the border. Until 2011, there was no formal money transfer service in Anse-à-Pitres, so Haitians had to use the Western Union or Caribe Express offices in Pedernales. If they were receiving money from family living in Haiti they would sometimes use informal service providers, such as the boats that carry goods, people, and money between Anse-à-Pitres and Marigot, located eighty kilometres away. Interestingly, even when more money transfer services became available, some people continued to use the slow boat service, as it was free.

The interviews also provided insights into who sends money to whom and how they send it. These cross-island links became evident through looking at people's receipts. Physical records are useful because they provide a fool-proof record of transaction details, such as the date and amount received. This can help interviewers gain a better idea of interviewees' income and how it is affected by long-distance relationships.

Money circulates between Haitians and their family members or friends living in different parts of the island, on both sides of the border. The reasons why people send money are various, and the circulation occurs in multiple directions. For example, a woman called Fredelina received money regularly from her boyfriend in the east of the Dominican Republic. In another case, a Haitian woman living on the border sent money regularly to her children who were studying at university in Santo Domingo.

Applications

Poor people often have complex financial lives and they use a range of financial tools to manage difficulties such as shortage of funds, lack of access to infrastructure, and irregular income. However, just as Jofish Kaye and his team discovered [see Case

Study 1 in this section], people do not usually keep their accounts in one place.

This combination of diverse financial practices and dispersed recording of transactions presents a research challenge as it makes data collection expensive. However, combining methods such as verbal and object-centred methods can help to build an integrated picture of people's financial transactions, and the insights generated could assist with the design of larger research projects.

A problem with all research into poverty is that researchers can find it difficult to know what questions to ask, since their lives often do not resemble those of the people they are studying. Researchers are often from wealthy countries or demographics, own multiple technological devices, are highly mobile, and have a greater degree of financial security than their interviewees. They are not necessarily familiar with the range of financial services that poor people use, and they may not be aware of other factors that impact the lives of poor and marginalised people, such as security concerns or the need use fake identification.

Object-centred methods can help reduce the gap between interviewer and interviewee because the things that people carry and use are a solid basis for asking questions.

Object-centred methods have clear applications in policy work, socioeconomic development, and commerce. Making good policy requires good information, and object-centred methods can be used in an exploratory way to shape research, or to clarify issues arising from other data collection methods.

Microfinance and other lending institutions can benefit from knowing more about their customers to reduce the risks involved in lending and extend loans to more people. Commercially, product design can clearly benefit from understanding how people incorporate objects into their everyday lives.

Ethical issues

The ethical and practical issues raised in this study are similar to those faced by Jofish Kaye and his team in Case Study 1. However, whereas Kaye's research focused on middle income people, this research focused on poor and marginalised people, and this raises further issues.

One ethical issue is whether to pay interviewees for their participation. Ideally, interviewees should be compensated for their time, but it does pose a number of problems.

First, research on personal issues such as finance and everyday life requires the building of relationships. This is difficult to achieve if residents view the researchers as providing employment or welfare. However, building personal relationships can be difficult regardless of whether money has changed hands, since researchers often have very different backgrounds and levels of wealth compared with their interviewees.

Second, paying participants means that those with the most need for cash may be more likely to participate in the study.

This introduces a research bias towards one segment of the population, and it also raises questions about whether interviewees are participating voluntarily.

To mitigate these problems, participants were only paid for the portable kit study at the end of the research period. They received 100 pesos (around USD \$6) for each hour of the interview, an amount that is above the Dominican minimum wage.

Most portable kit participants were people who had already contributed to the study, so paying them for the portable kit study was a way of compensating them overall. It also meant that most of the participants were people who participated willingly in the study because they were interested in the research.

Another ethical issue was how to provide people with sufficient opportunities to ask questions about the research. At the beginning and end of each interview, participants were asked if they had any questions or if there was anything else they would like to tell the researchers. Often they wanted to know more about what the research would be used for.

Although the researchers explained the study's aims and nature during the recruitment process and at the beginning of each interview, it was often not until after the interview had taken place that participants thought of questions to ask. This is a good illustration of how important it is to provide participants with opportunities to speak up during different phases of the research.

More about the method

Researching a Posthuman World: Interviews with Digital Objects by Catherine Adams and Terrie Lynn Thompson (2016, Palgrave Macmillan)

'On studying algorithms ethnographically: Making sense of objects of ignorance' by Ann-Christina Lange, Marc Lenglet, and Robert Seyfert (2018, *Organization* 1-20)

'Tactile digital ethnography: Researching mobile media through the hand' by Sarah Pink, Jolynna Sinanan, Larissa Hjorth and Heather Horst (2015, *Mobile Media & Communication* 4 (2): 237-251)

'Finance as "bizarre bazaar": Using documents as a source of ethnographic knowledge' by Daniel Tischer, Bill Maurer and Adam Leaver (2018, *Organization* 1-25)

Personal, Portable, Pedestrian: Mobile Phones in Japanese Life edited by Mizuko Ito, Misa Matsuda and Daisuke Okabe (2006, MIT Press)



Figure 10

FINANCIAL DIARIES

What we currently recognise as the financial diary method was pioneered in the late 1990s by a group of researchers with expertise in economics, finance, anthropology, development, and architecture.

In the late 1990s, David Hulme (credited with the diary idea), Stuart Rutherford, Jonathan Morduch, Daryl Collins, and Orlanda Ruthven developed financial diary research methods based on three very different projects (qualitative and quantitative) that involved returning to households at intervals (usually every two weeks) to collect data.

Using questionnaires and observations, they would record households' cash flows in the intervening period, including where their money came from, their spending and savings patterns, and the financial instruments they used to manage their money.

In their book *Portfolios of the Poor: How the World's Poor Live on \$2 a Day*, the authors explain why the diary method is such a powerful tool:

“...finance is the relationship between time and money, and to understand it fully, time and money must be observed together.”⁵⁶

The financial diaries method has since been applied by numerous social scientists working in different parts of the world. The method has proved useful for understanding households in wealthy nations as well as in poor ones (such as the US Financial Diaries Study, and has proved useful for commercial projects as much as for ones with non-profit goals [see the case studies in this section].

The financial diary method can be used to collect a wide range of data, from small, exploratory studies to large, statistically representative ones.

The case studies in this section give examples of two very different kinds of implementation.

WHAT IS IT?

- Qualitative / quantitative
- Combines self-reporting with interviews
- Face-to-face or remote data collection

Financial diary studies are a method of collecting data on financial behaviours by using a 'diary' to record transactions. Financial diaries are not diaries in the way we normally understand them. Respondents do not simply write down their thoughts, but rather are given a structured set of questions that record both qualitative and quantitative responses [see Case Study 1].

Questions are generally designed to elicit the reporting of both formal and informal financial activities, and how these fit into the context of a participant's life. They can include open questions and closed questions, thus producing both qualitative and quantitative data. Financial diaries can also be combined

Examples of use

- The US Financial Diaries Study tracked 235 low- and moderate-income households over the course of a year to collect data on how families manage their finances on a day-to-day basis.⁵⁷
- The Research, Ethnography, Design (RED) NCR group in Singapore and Scotland used the WeChat app as a mobile diary to document everyday transactions in China.⁵⁸
- Using financial diaries, the World Bank investigated how financial services impact crisis-affected communities. Improving access to credit, savings, remittances, and digital cash transfers were some of their policy recommendations.⁵⁹
- L-IFT, a Dutch company, carried out financial and energy diary studies in several African countries.⁶⁰
- Microfinance Opportunities used financial diaries in their research in several countries, including Kenya, Malawi, and Zambia, as a learning tool to enhance a savings group program.⁶¹
- CGAP's Smallholder Households Financial Diaries Project, carried out with Bankable Frontier Associates, examined how smallholder households combine agricultural and non-agricultural sources of income and employ a range of financial tools in Pakistan, Tanzania, and Mozambique.⁶²
- FSD Kenya, also with Bankable Frontier Associates, undertook a financial diaries project between 2012 and 2013 that took a broad look at the financial behaviour of a diverse sample of Kenyans.⁶³
- Researchers from the Australian National University and the University of Burdwan in India used financial diaries to study the financial behaviours of people living on river islands in Bengal.⁶⁴
- Freedom from Hunger used financial diaries in Mali and Ecuador to better understand young people living in poverty.⁶⁵
- Bankable Frontier Associates and The MetLife Foundation led the Mexican Financial Diaries Project in Mexico City and Oaxaca, offering crucial insights into the ways families juggle borrowing and instalment credit to bridge gaps in volatile income patterns.⁶⁶

with other methods, such as different kinds of interview techniques, observations, or even field experiments such as RCTs [see Experiments].

A standard approach to using financial diaries is to choose a sample population of households or individuals, design a financial diary that suits the research questions, and collect data at regular intervals (e.g., every week or two weeks). While the data collection period varies from study to study (usually between a month and a year), all financial diary studies capture participants' changing financial behaviours over time.

Participants may fill out the diary themselves, or an interviewer may fill it out for them (especially in cases where literacy might be an issue). Diaries may be recorded on paper, using a mobile application, or directly into a digital database. They can be implemented in person or using online software.

STRENGTHS

Show range of financial product use

Financial diary studies can yield insights into financial management by individuals and households everywhere, and of all levels of financial means. However, they are best known for transforming our understanding of money management among poor families in 'developing' countries.

One of the most striking findings of the financial diary studies described in *Portfolios of the Poor* is it demonstrated that poor people use a wide range of formal and informal financial products. This insight, now confirmed by multiple studies, contests the assumption that poor people are not active money managers. This can potentially lead to new policies and interventions.⁶⁷

Commercial work can also benefit from financial diary studies. It is often useful for financial services providers to find out how customers use their own products and those of their competitors. New financial products and services are developing rapidly around the globe, and keeping up with customers' changing preferences and use patterns can assist companies to adapt their products to these changes.

Track financial behaviour over time

Financial diary studies are carried out over a period of time, usually ranging from a few weeks to a year. Because participants are generally asked the same questions at intervals over the entire time period, it is possible to observe how individual households or families address many different kinds of needs, opportunities, and challenges. These observations can include juggling volatile incomes, coping with crises, spending on a major event, or investing in capital.

Record information creatively

The diary format makes it possible to build in creative ways for respondents to answer questions. This is particularly the case for self-reported diaries. Respondents can be asked to provide an array of low-tech or high-tech information types, including written answers, numerical answers, choosing from a scale, drawing pictures, generating maps, adding photos and videos,

and attaching documents such as bank statements. This is also important for identifying differences in local concepts and financial behaviours, such as ways of categorizing savings versus investments.

Increase financial awareness

A potential side effect of financial diaries is that they may help participants to become more aware of their financial behaviours, leading them to make changes in their lives. This might be achieved passively, such as when a participant's involvement prompts them to think more carefully about their financial behaviour.

However, further research needs to be undertaken before it can be confirmed that such changes have taken place in the long term. Moreover, a potential problem with viewing financial diary participation as having an educational effect is that it rests on the assumption that families were doing something 'wrong' to begin with.⁶⁸

Financial diaries researchers see their role as one of listening and recording the details of people's financial lives. It is not about telling respondents to do things differently or to give them lessons in money management. Rather, financial diaries, when done well, can show when and how people use different types of tools. Findings can be used to recommend policies or design financial products that better fit people's existing strategies and needs.

LIMITATIONS

Representativeness

When researchers carry out diary studies in person, they face constraints on how many diaries they can feasibly collect. This makes it difficult to achieve a representative sample. In practice, most financial diary studies ask questions about broader populations, but need to cluster the sample geographically due to resource restrictions. This means that their ability to extrapolate their findings to an entire population is limited.

For example, if a research group wanted to find out about the financial behaviours of, say, Haitians living on less than \$5 per day, then they would need to do an enormous amount of research to carry out the study with a representative sample of Haitians. However, if the research focuses on a small geographic area, such as a village, then achieving a representative sample is possible.

Many financial diaries studies do not aim to be representative. Instead (like ethnography) they provide fine-grained detail, qualitatively and quantitatively, about peoples financial lives—not only what people "earn or spend, but in what frequencies, amounts, and modes."⁶⁹ This can help to generate new questions and hypotheses that can be tested, such as through Randomised Controlled Trials (RCTs), to show a specific cause and effect relationship or capture an effect at a more representative scale.

Self-reporting bias

All research runs the risk of incorporating the biases of the researchers and participants involved. Self-reported data can be particularly problematic because there are fewer opportunities for researchers to control the data collection process.

For example, participants may not understand a question fully, but if a researcher is not present when the diary is filled out then there may be no opportunity for them to check the question's meaning. Whether this compromises a study will depend on the project's aims.

Generally speaking, the more oriented a research project is to collecting data on people's values and opinions, the less such bias will interfere with the results. Self-reporting is generally unreliable in cases where accurate numerical information is required.⁷⁰ With more qualitative studies, however, misunderstanding bias often goes away over a few interviews. This is an advantage of diary studies over surveys.

Timing of data collection

One important feature of financial diaries is that they are generally collected at regular intervals. Participants are asked to give responses on particular dates or even at set times of day. However, this is dependant on respondents having enough spare time in their day, and this is not always achievable.

According to Julie Zollmann, data accuracy is not particularly affected by minor deviations in timing. However, timing issues can strain a research project's resources, since costs increase when researchers have to spend time searching for respondents. Asking participants to fill out their diaries themselves overcomes this problem, but raises the self-reporting issues described above.

In some cases data collection can be made more efficient when the target group meets regularly for an important event, such as a meeting or a social activity. Scheduling data collection for times that fit with the participants' collective schedule can be effective, so long as the group is comfortable with the research taking place within that time slot.



Figure 11

Case Study 1

THE 'PORTFOLIOS OF THE POOR' IN BANGLADESH, INDIA, AND SOUTH AFRICA

The *Portfolios of the Poor* authors developed the financial diary research technique because they wanted to better understand the diversity of financial tools and money management strategies of the poor in granular detail that was generally missing from studies of low income people at that time. Most studies depicted low income people as having access to few financial tools, and gave the impression that they lived purely hand-to-mouth.

In fact, as the financial diaries showed, poor people often have a greater range of financial tools at their disposal than people who live in wealthy countries. This is because they use a range of informal as well as formal tools.

Part of the reason why knowledge about poor people's use of financial tools was limited was because financial service providers who undertook many of these studies were only concerned with how their customers used their own products. According to Rutherford, banks in Bangladesh acted as though they worked in a vacuum, as though the poor had no financial partners other than themselves.

In order to address these problems, the researchers set about developing a new method. They explain:

"What was needed was a method that would capture the richness and complexity of poor people's financial lives while being systematic enough in its data collection to prevent it from being dismissed as a set of mere 'anecdotes.'"⁷¹

The team wanted to retain the richness of data that qualitative research produces, while also generating sufficient quantitative data of high quality to show general patterns in behaviours across their research sites.

Method

Between 1999 and 2005 the researchers undertook financial diary studies with over 250 families in Bangladesh, India, and South Africa. Teams of researchers visited the homes of participants every two weeks for the course of a year, recording information about their saving, spending, lending, and insuring practices.

Participants were generally residents of a small number of communities. In order to choose research locations, the researchers made use of national surveys, but they were also guided by practical considerations, such as choosing communities that were within reasonable travel distance from their own bases.

To choose households in India and South Africa the researchers used a technique known as 'wealth ranking'. This involves asking residents to rank the wealth of their neighbours and compare the results. The logic is that people are likely to misreport their own financial position, but in small communities they often have a good understanding of the financial position

of their neighbours. Wealth rankings allowed the researchers to select participants from the bottom, middle, and top of the list. The researchers were not able to use this technique in Bangladesh because people moved around so much that they did not know enough about each other. The researchers report that an additional bonus was that it also gave participants a sense of ownership of study.

Each study began with an initial two in-depth interviews with each household, to allow the researchers and participants to get to know each other. Then, the researchers returned to the households every two weeks for a year, using a variety of forms to record information on financial practices and new developments.

After every visit the researchers calculated the 'margin of error' in responses by comparing incoming and outgoing expenditures. This helped to increase the accuracy of self-reporting. On the next visit, the interviewer would ask further questions to try to find out where the difference had come from. Researchers explored the emotions that accompanied interviewees' transactions, as well as the characteristics of the transactions themselves.

Interviews often took place while interviewees carried on with their work, such as cooking lunch or feeding cows. Visitors often interrupted them. These conditions were not always favourable for data collection, but gave the researchers a chance to observe everyday life. The researchers took care to listen to their participants, but not to offer advice or opinions. Once data collection was completed, the data was analysed using both qualitative and quantitative methods. The results were compiled into 'portfolios' consisting of the balance sheets of the households, and qualitative data detailing their circumstances and experiences. The researchers also conducted analyses of cash flow and compared data across the three research sites.

Findings

What makes this study remarkable is that it demonstrates clearly how low income people cope with unpredictability by using a wide range of financial tools. Participants used different tools in tandem to achieve savings targets and pay off debts. A table of all the formal, semi-formal, and informal financial instruments that the team discovered can be found in the book *Portfolios of the Poor*.

By visiting interviewees regularly and following up on points that were previously unclear, the team made various findings that they were not expecting. One of these was the habit of 'moneyguarding', a practice of leaving money with neighbours and friends for safekeeping. Sometimes people chose this option because it was more convenient than storing money in a bank.

At other times, people's distrust of banks was the driving factor. One man in Bangladesh had sizeable savings that he previously kept in a bank. However, he eventually gave them to

a friend to mind because he had an overdue loan and did not want the bank to know that he had savings.

Another case is that of Thabo, a man living in South Africa. Thabo received money from time to time through his bank. At first the researchers supposed that someone must be sending him money, but after many conversations it turned out that these were interest payments on a deposit. Thabo had become retrenched some years previously and had deposited his lump sum payment in the bank. He would usually reinvest the interest he earned, but sometimes he would withdraw it to spend.

Much like with ethnography, the long-term relationships developed between interviewers and interviewees in financial diary studies improved data quality because they enabled the development of trust and provided time to explore research themes. As the authors note:

“None of this is peculiar to poor people: in developed economies people may also be unclear about their financial actions and may possibly be even more reticent. But the strength of the diaries approach is that it can, over time, break down much of this reticence and confusion.”

In many respects, individual's stories have generated more ground-breaking revelations than have the project's quantitative outputs. Individual case studies capture behaviours that are rarely recorded in surveys, bank statements, or one-off interviews.

Applications

Since *Portfolios of the Poor* was published in 2006, the financial diaries method has been widely used by development organisations and companies working with the poor, especially in the area of microfinance.

Microfinance agencies are most prevalent in countries where levels of formal banking are low, national data collection is scarce, and credit bureaus do not exist. Agencies have therefore found it difficult to assess risk, anticipate how households will spend the money they receive, where else they are getting loans from, and find out what other financial instruments people use that may impact their financial health.

Financial diaries help microfinance agencies to improve client information because they provide a way to collect data on every aspect of a household's financial position. More broadly, financial diaries can help identify a range of household financial behaviours that may otherwise go unnoticed, and they can provide a wealth of recommendations for all kinds of organisations working with poor households.

In 2013, researchers at Digital Divide Data and Bankable Frontier Associates implemented the Kenya Financial Diaries, which tracked the detailed cash flows of 300 low-income families for a full year. One of this study's most valuable contributions was to shed light on how poor people use social networks to provide a safety net. While it is well known that poor people depend upon such networks, we rarely have a nuanced view of their benefits and limitations.

In a blog post on the CGAP website,⁷² Julie Zollmann points out that many poor people prioritise investment-related saving

over short-term liquidity. While this is a sound strategy for improving one's financial position in the long run, it can create cash shortages in the short run, since people's savings might be locked away in savings groups. This means that people need to be able to borrow quickly. This explains why M-Shwari is so popular in Kenya despite its short loan period (30 days) and high fees (7.5%).

In another post,⁷³ Zollmann explains how the financial diaries showed that networks are often inadequate channels to raise money for unforeseen expenses (such as medical costs), may take too long to deliver, and often serve women more than men. Moreover, households that give money to relatives may find themselves short of cash to cover their own expenses.

These findings echo Sibel Kusimba's observation, uncovered through her social network interviews, that Kenyans grow weary of being asked to contribute funds within their social networks, and that they find ways to avoid financial reciprocity [see Case Study 2 in Interviews].

Zollmann provides a number of suggestions for how we may harness these insights to better meet the needs of the poor, including marketing financial services to households that tend to run short of cash, and improving information flow so that households in need can find support more efficiently.

Importantly, FSDK funded an additional year of work after the study was published to help service providers and funders incorporate key insights into their work. They undertook specific analyses of health and education financing, and these helped providers to think about service options that might be more effective in helping people finance key life needs. With respect to risk, they have been helping providers look beyond insurance, given that people are often unwilling to tie up their funds in purpose-specific risk mitigation.

Financial diaries are equally useful in the commercial world. As the *Portfolios of the Poor* authors note, collecting data on the financial practices of wealthy people can be just as difficult, if not more so, than collecting data on the poor.

Banks can benefit just as much as microfinance agencies from knowing more about their customers' financial practices. This is especially the case today given the rapid changes sweeping the banking and payments industries. Financial diaries can show how people adopt new services and what factors influence their decisions.

Government bodies also stand to learn much through applying the financial diaries method. For example, using financial diaries to learn about the financial behaviour of socially disadvantaged groups may help to show how issues such as financial literacy and decision-making result in disadvantage or can help overcome it [see Case Study 1 in Interviews].

According to Zollmann,⁷⁴ they also suggest that financial literacy programs are not as useful as we may think, since they show how people are highly skilled at managing their own money. A lack of resources, not a lack of skills or knowledge, is the real problem faced by the poor. Driving down the costs of banking is one specific way in which financial tools can become more affordable.

Ethical issues

Financial diaries raise ethical issues similar to those that are found in any other study. These include confidentiality, privacy, and coercion. Financial diaries are time-intensive and may be burdensome to participants who must make time in their otherwise busy schedules and social obligations. Indeed, the fact that financial diary studies often involve repeated interviews could also exacerbate the difficulties of ensuring the privacy of participants.

Researchers who are undertaking repeat studies often gain participants' trust to a greater degree than is usual because they return to households on a regular basis and come to know their participants well. Participants may become confident enough to share sensitive information that could work against them if it were widely known.

Extra care must therefore be taken to protect participants' identities and data. This includes being aware during interviews that other people may be listening in to the interview, and providing interviewees with opportunities to interrupt the interview. After each interview, data must be stored and shared securely.

When reporting analyses, care must be taken to hide participants' identities. This is more difficult than people often imagine, since it is relatively easy to identify a person based on very little information. Moreover, funders may apply pressure to share participants' personal stories and information in ways that compromise their anonymity and privacy. Julie Zollmann noted that these can include:

"...pressure to make the data 'open' including really deep qualitative responses that can compromise confidentiality pretty easily; pressure to do more geospatial analysis, where our funders really want people's GPS points and to make maps that betray respondents' locations—including some who tell us about crimes during the diaries; pressure from funders to add visuals, like photos and videos. It takes a lot of work to ensure images and stories are kept separate. It's much easier to give in to donor pressure, particularly for institutions who don't answer to IRBs [internal review boards]."

For more information on protecting participants' identities, see the guidelines published on Forum: Qualitative Social Research or Mark Israel's book *Research Ethics and Integrity for Social Scientists*.⁷⁵

Case Study 2

COMMERCIAL RESEARCH USING ONLINE FINANCIAL DIARIES

Financial diaries can be used for commercial research as well as in the area of socioeconomic development. Given that commercial organisations might have fewer resources to spend on research, and often require fast turnarounds, shorter versions of financial diaries can be particularly useful.

While she was a Research Fellow at Pitney Bowes, Alexandra Mack conducted financial diaries as part of a study of financial communications management in the United States.⁷⁶ Mack was interested in how 'financial communications' impacted financial management within a household. She had already used other methods to collect data on financial behaviour, including interviews and scrapbooking.

The financial diaries were an opportunity to dig deeper into some of the issues she had discovered, such as how financial management varies by life stage, and factors that impact attitudes toward new technologies for managing finances.

Method

Participants were recruited through a professional recruiting firm and were informed that they would receive a one-off payment of USD \$150 if they successfully completed the study. All participants were over 21 years of age, had household incomes over USD \$50,000 a year, and lived in the United States.

Mack's financial diary was conducted entirely online, using software called Revelation. Participants were able to record their diaries in their own time over the course of a week. The first time they logged in, participants were asked to agree to the terms and conditions of the project, and to choose a screen name and a password.

Over the next week, participants were required to log in to the site each day and complete a variety of activities. These included answering questions, keeping logs of some financial interactions, and having group discussions with other participants. They would also take pictures using their digital camera or camera phone and post them to the project site.

Mack individually emailed participants before the start of the study using her work email address (displaying all her contact information). This email welcomed the participant and told them specifically what to expect from the study. Mack reports that an additional advantage of emailing participants directly is that participants know who the researcher is, how to get in contact with them, and that they are interacting with a real person.

Each day of the study, Mack sent an email in the morning via a group email, using BCC so that the participants could not see each other's contact information. In that email she reminded them of whatever daily tasks they should include in their diary. This was a useful way of reminding participants to fill out their diary because they were all using email every day.

Mack notes that in some cases, such as where people have mobile lives and occupations, text message reminders might work better as reminders to participants. The key point is to remember you are asking them to do something 'new' for the period of the study.

The first question in the diary study asked the participant to talk about themselves. As with the *Portfolios of the Poor* studies, and indeed most other qualitative research, asking general questions is essential to help researcher and participant get to know each other, and to give participants a chance to communicate their own point of view.

Participants were asked to report every day on communications they received from banks and billers, as well as on financial interactions other than shopping. Other questions asked participants to discuss their use of mobile applications, practices around bill payments, and their experiences with fraud. In group discussions participants were asked questions such as, "What annoys or bothers you most about your financial communications?"

Mack tried to give some feedback to their responses daily, whether in the form of a thank you note or a follow up question. She explains:

"This lets them know that they aren't communicating into a black hole. Also, the follow-up questions help to get more details, and clarify and encourage more engagement and longer answers."

This follow-up technique is similar to that outlined in the *Portfolios of the Poor* case study. However, whereas the Portfolios of the Poor studies used teams of researchers and took place in diverse locations, Mack worked alone. She notes that, while resource-intensive, a reason why this study worked well was because doing the diaries online permitted the recruitment of a greater number of participants than would have been possible if the study were carried out in person.

Mack found people to be quite willing to share information online, although this is at least partly because participants were not asked to share financial details such as bank balances or account numbers. However, the online nature of the study also presented a disadvantage: not being physically present meant that it was not possible to observe participants' behaviours. This made it difficult to know what other possible questions should be asked.

Findings

Mack found the method to be suitable to create a broad picture of people's financial behaviours, the products they use, and their financial communications. While not longitudinal, she was able to ask questions about changing practices, and what prompted individual's shifts in their own behaviours.

Because the interactions lasted over several days, Mack could query the subjects on different topics that might have felt disconnected if asked back to back in an interview. What began as a study of financial communications evolved based on participant responses into a larger project around financial management.

Applications

Online diaries can be a useful method for targeted data collection on a range of topics not limited to financial research. They allow the participants to engage in their own time, and they provide participants with space for deeper reflection as well as some dialogue with the researcher. They are particularly useful for subjects that might require closer documentation than the participant's memory, as they provide a location to capture information. Online tools can also be used to gather a wide range of feedback from participants, whether in the form of an idea, a picture, or a slogan.

Ethical issues

Online financial diaries face many of the same ethical issues as diaries collected in person. Mack told us:

"As with any qualitative research, it is crucial to have participants' informed consent, and to make very clear to them their ability to stop the study or simply opt out of any parts that are uncomfortable. While online tools are not public in the same way as social media sites or blogs, it is important for participants to understand that their words and pictures may be preserved on a third party server."

Protecting participants' privacy can require somewhat different procedures in online diaries compared to research carried out in person, since data is transferred through third party programs. For more on ethics and data, see Digital Research.

More about the method

Microfinance in India: A Primer on the Financial Diaries Methodology by R. Kamath, S. Ramanathan and S. Rathna (2009, College of Agricultural Banking)

'Embedding remittances: A methodological note on financial diaries in Nicaragua' by Nanneke Winters (2017, *Tijdschrift voor economische en sociale geografie* 108 (2): 175-189)

A financial diary study is described in Chapter 13 of *Understanding Your Users: A Practical Guide to User Research Methods* by Kathy Baxter, Catherine Courage, and Kelly Caine (2015, Morgan Kaufmann)

CGAP released a report and data sets in February 2016 for their year-long Smallholder financial diaries project in Mozambique, Tanzania and Pakistan⁷⁷

Figure 12



DIGITAL RESEARCH

From paying bills to trading stocks, digital technology has radically changed how consumers and professionals manage their financial lives. In fact, this process of change has not stopped, since new digital services are coming onto the market every day.

As David L Stearns describes in his book, *Electronic Value Transfer: Origins of the VISA Electronic Payment System*,⁷⁸ the history of payment systems can be traced back as far as the 19th century, when wire services made it possible to send money quickly over long distances.

However, digital finance did not take off in a large way until the World Wide Web became accessible in the early 1990s. For the first few decades digital financial tools for consumers were largely limited to online banking. Today, however, all-but-universal access to mobile devices and the internet mean that digital finance is the norm, not the exception.

As digital consumer finance has grown, the range of research topics and the tools we use to investigate them have also expanded. Digital research covers a broad range of topics, including user experience, financial literacy, digital service uptake, privacy issues, security risks, how digital services affect consumer choices, how digital interaction shapes financial decisions, the uptake of digital currencies, use of digital services for illicit activities, and so on.

Researchers have developed all kinds of digital research tools, from Zoom interviews to online financial diary studies and participant observation in online communities. These digital research tools have become all the more important since the outbreak of Covid-19. Since researchers cannot always safely conduct face-to-face research, they are having to experiment with digital methods to gather meaningful data.

Financial service providers have been particularly instrumental in developing survey techniques and ways to test user preferences, since they are geared towards identifying customer needs and preferences in order to develop better products and better delivery mechanisms.

While earlier commercial research tended to focus on product development, later studies have shifted focus to customer relationships, including investigating how digital devices can be harnessed to create greater intimacy with customers.⁷⁹

Social scientists working in universities and government bodies have applied a broad range of qualitative and quantitative methods to digital finance research. These have included ethnographic observations of credit card use by anthropologists, interviews and surveys by sociologists, and lab experiments by economists and psychologists.

With respect to consumer well-being, psychologists and sociologists have investigated the impact of digital money on people's spending habits, especially focusing on whether it increases indebtedness.⁸⁰ Other studies find new ways to gather data, such as Joshua Blumenstock's work analysing mobile data in Rwanda and Afghanistan to discern wealth distribution and migration patterns.⁸¹

Non-profit organisations have tended to be more focused on how digital consumer finance can increase the financial inclu-

sion of the world's poorest people, including Information and Computing Technology for Development (ICT4D) and the use of digital devices for microfinance and money transfers. Field experiments have been used extensively as a way of testing development program effectiveness [see Experiments].

But commentators have pointed out that unequal access to technologies (the 'digital divide') means that some groups are unable to benefit from digital services, and may even face greater risks using digital services than transacting in cash.⁸²

Of course, digital finance also raises the possibility of exploring 'big data'. However, many of these data sets are proprietary and often off limits to external researchers. In order to gain access to such data, researchers must approach the institution that owns the data they want and request a Data Use Agreement (DUA).

A DUA is a legal document that allows researchers to access, analyse, and publish data under certain conditions, usually focused on protecting the confidentiality of participants. Whether the owner is legally permitted to share their data with another party depends upon the legislation that is in operation in both the institution's and recipient's jurisdictions. Researchers wishing to access a particular data set should contact the institution that owns it and request a DUA.

Digital research is also a fertile ground for testing new methods and innovating with existing ones. Here we present two case studies showing unusual ways of combining methods to solve research problems.

WHAT IS IT?

- Qualitative / quantitative
- Multiple methods possible
- Face-to-face or remote data collection

Digital research is not a method in its own right, since technically all of the studies in this Toolkit can potentially have digital aspects. Interviews, surveys, focus groups, ethnography, experiments, financial diaries and user data analysis are just some of the methods that can be adapted to digital research.

However, digital research deserves specific attention because it changes the ways in which we can carry out these classic methods. It provides us with new tools and new avenues for communication with research participants and data. Moreover, consumers are using an increasingly wide array of digital payments services. These include:

- Using ATMs
- Multichannel banking
- Shopping online for insurance
- Making mobile phone payments
- Use of digital currencies
- Playing the stock market online
- Creating a household budget on a computer spreadsheet

Digital research can take place online, face-to-face, or both. Studies carried out online may include interacting with participants in games, conducting participant observation in forums, or examining patterns of usage across social media ('social media listening').

Studies carried out in person may include moderating a focus group about use of payments tools, conducting observations of people using online banking, shadowing people as they shop, or interviewing a person about their use of an app on a mobile phone. Some studies use both modes, incorporating data collected online and offline to build a picture of how people's digital and analog behaviours are related.

Digital research therefore often blurs the boundary between 'online' and 'offline' worlds. Indeed, as the anthropologist Tom Boellstorff comments:

"One thing that this kind of research demonstrates is that online interaction can be 'virtually' face-to-face, and digital technologies are changing what it means to be 'remote' in the first place."⁸³

An exciting outcome of the spread of digital consumer finance is that it has expanded the range of methods, tools, and techniques available to researchers. The fact that most people use computing technology (especially mobile phones) means that researchers can shift away from classic ways of collecting data, instead using online surveys, mobile apps, chat programs, video interviews, blogging programs and other tools

STRENGTHS

Reduces geographic constraints

Internet-based studies can enable participation by people who would not usually be able to take part due to geographical distance from the research site. Recruiting and data collection can take place through a variety of platforms, including social media, electronic mailing lists, third party websites, games, and video calls. This reduction of geographic constraints can assist with increasing the representativeness of a sample, and can facilitate studies that compare geographically distant groups (say, in different countries or regions), which can then be mapped with other variables.

Expand the range of tools available for research

Digital researchers are innovating with new ways to collect and analyse qualitative and quantitative data. There is now a wide array of web-based tools for data collection and analysis, including software developed specifically to collect research data (such as Revelation, a program that participants use to share information with researchers⁹²), platforms that were designed for other purposes but that researchers use for data collection (such as social media sites, discussion groups, or third party data sets), or analytical software that can be downloaded or used online.

Facilitate follow-up studies

Locating participants after a research phase is completed can be difficult. People may change their address or phone number, and locating people in person is expensive and time-consuming. Social media and email make it easier to contact participants for follow-up research or to share a study's results.

Examples of use

- Information Scientist Margaret Jack and her team looked into the penetration of online shopping, buying and delivery in Phnom Penn, Cambodia, examining online platforms like Facebook and online payments such as Wing in combination with paper and cash.⁸⁴
- Chapter 7 in the *Handbook of Consumer Finance Research* discusses laggards in e-banking uptake.⁸⁵
- A research paper called 'Zap it to me: The short-term impacts of a mobile cash transfer program' reports on the first randomised evaluation of a cash transfer program delivered via the mobile phone.⁸⁶
- A World Bank working paper, *South-South Migration and Remittances*, uses World Bank data sets to analyse and estimate remittance flows.⁸⁷
- Researchers examined the extent to which anonymised data from mobile phone networks can be used to predict the poverty and wealth of individual subscribers in Rwanda.⁸⁸
- A European Parliament report, *Consumer Behaviour in a Digital Environment*, focuses on how consumers benefit from the digital environment and whether and how they change their purchasing behaviour.⁸⁹
- Researchers from the National Bureau of Economic Research studied how 'digital assistants' can be used to remind people to save money.⁹⁰
- CGI's report *Understanding Financial Consumers in the Digital Era* presents findings from their survey of consumers in the US, Canada, France, Germany, Sweden, and the UK.⁹¹

LIMITATIONS

Limited access to some groups

Digital research methods can only increase a sample's representativeness if the target population are online or own a mobile device. While mobile phone ownership is increasing rapidly, rates of Internet connectivity are far from uniform. This is especially true in developing countries, and sometimes also true of 'wealthy' economies. Research design therefore needs to consider what the best method is to reach the target population.

Remote data collection can reduce data quality

Relying on remote data collection can reduce the quality of the data that researchers collect. This is because participants tend to share more information with people they trust, and it can be difficult to develop this trust online. This can present problems for both quantitative research (e.g., convincing people to take a survey or complete it accurately) and qualitative research (e.g., conducting an interview with a stranger).

These problems are not unique to digital research: telemarketers have faced them for decades. Ultimately, whether or not remoteness presents a problem depends on the type and depth of information that the research aims to collect.

Case Study 1

STUDYING BITCOIN USING QUALITATIVE AND QUANTITATIVE METHODS

The evolution of digital payments has generated some interesting forms of financial transactions. Digital currencies, such as Bitcoin and Dogecoin, are perhaps the most controversial of these, since they are not created by government entities or banks, provide a means to circumvent currency control, and can be used (within limits) to hide transactions from the law.

Bitcoin has unique characteristics that make it markedly different from other payment systems in how it operates and how it can be used. Unlike credit cards transactions, Bitcoin payments are anonymous; no user information is recorded in the transaction. Bitcoin transactions are not cleared through banks or any central location. Instead, they are cleared by a network of participants who compete with one another for a reward for authorizing them.

Bitcoin is a matter of interest to policy-makers, central banks, and researchers who are interested in the technical aspects of this new form of money creation and transaction. It is also of interest to exchanges and investment banks interested in the possibilities of its distributed nature for increasing settlement speed. However, Bitcoin's novelty and technical complexity means that researching it requires both creativity and expert knowledge of computational mathematics.⁹³

A team of researchers from the University of California, San Diego and George Mason University have pioneered new ways of understanding Bitcoin and its users through combining qualitative and quantitative techniques.⁹⁴ The researchers were interested in identifying the extent to which Bitcoin lives up to its promise of pseudo-anonymity and to investigate how people's use of Bitcoin has changed over time.⁹⁵

The team combined participant observation (using Bitcoin themselves) with algorithmic analysis of transactions, which they used to cluster users and the transactions between them. They identified service providers, but not users themselves. They used this information to identify the factors that compromised users' pseudo-anonymity.

Method

In contrast to most payment systems, flows of value around the network are publicly visible. When a user makes a transaction they use a public key that encodes their identity so that it is not passed on to anyone else in the chain. However, the Bitcoin block chain encodes all transactions, past and present, and it is this feature that makes value flows publicly visible.⁹⁶

In this study, the researchers exploited the visibility of Bitcoin flows to cluster and positively identify Bitcoin service providers through applying algorithmic analysis and participating in transactions themselves. They used public keys to make 344 purchases from a range of sellers on Bitcoin, including mining pools, wallet services, bank exchanges, non-bank exchanges, vendors, and gambling sites.

These exchanges allowed them to cluster users, which in turn enabled them to identify major institutions in the Bitcoin marketplace and the interactions that occurred between them. The researchers were only able to identify those users that they interacted with, which were almost entirely third-party services like exchanges, not individual people.

The researchers began by carrying out a “re-identification attack” in which the researchers opened accounts and made purchases from a variety of Bitcoin merchants and service providers whose identities were already public (such as Mt. Gox and Silk Road). Since the researchers knew which public key they used themselves, they were able to positively label the public key on the other end as belonging to a particular service provider.

The researchers then turned to Bitcoin forums to locate cases in which vendors had identified their own particular key. They explain that many users list their addresses (or ‘tags’) publicly. For example, charities list their donation addresses, and a company called LulzSec publishes their address on their Twitter account.

The researchers did not attempt to collect all addresses available, but did amass a collection of 5,000 in total. They also searched Bitcoin forums (such as bitcointalk.org) to look for Bitcoin addresses of defunct organisations or ones that are associated with major thefts. According to lead author Sarah Meiklejohn:

“The thefts show how criminal actors are engaging with Bitcoin; i.e., are they using it in a naive way, in which our attacks could be easily applied, or are they doing something more sophisticated like using mix services? Are they cashing directly out of the system using exchanges, or are they keeping the stolen funds in Bitcoins? Basically, thieves were the most motivated users we could think of in terms of wanting to maintain anonymity, so it seemed natural to study their behaviour for this problem.”⁹⁷

The researchers warn that these self-identified tags are not as reliable as the ones they collected themselves through making transactions, so they “consequently labelled users only for addresses for which we could gain some confidence through manual due diligence.”

After this collection phase, the researchers analysed the data using clustering heuristics.⁹⁸ This enabled the researchers to identify 1.9 million public keys belonging to service providers or identities. They examined interactions with known Bitcoin service providers, and were able to identify 500,000 addresses as controlled by Mt. Gox, and more than 250,000 addresses as controlled by Silk Road.

This did not allow them to identify the individuals making transactions per se, but it did allow them to observe interactions with particular services, such as deposits and withdrawals. In other words, the flow of Bitcoins in and out of the service was de-anonymised.

Findings

The main finding of the research was that, despite widespread belief that Bitcoin is pseudo-anonymous, Bitcoin users can in fact be identified. The authors state:

“Even our relatively small experiment demonstrates that this approach can shed considerable light on the structure of the Bitcoin economy, how it is used, and those organizations who are party to it.”

While they did not identify real-world accounts directly, their analysis de-anonymised users to a significant degree. In particular, the researchers analysed certain highly publicised thefts to see if they could track the Bitcoins to known services. In most cases they found that this was quite straightforward. This has major implication for law enforcement:

“...demonstrating that an agency with subpoena power would be well placed to identify who is paying money to whom.”

This is largely because a small number of Bitcoin institutions (mostly services performing currency exchange) are becoming dominant, but it is also due to the public nature of Bitcoin transactions and the ability to label monetary flows to major institutions. Pseudo-anonymity therefore:

“...ultimately makes Bitcoin unattractive today for high-volume illicit use such as money laundering.”

The researchers suggest that a follow-up quantitative study could help to identify the scale of the issue.

Applications

Studies of Bitcoin and other digital currencies have clear applications for law enforcement, policy development, and understanding changes taking place in online trade.

With respect to law enforcement, this study suggests that it would be easier to confirm identity, and therefore prosecute illegal activity carried out using Bitcoins than people tend to believe. Users may wish to think twice about whether Bitcoin really does protect their identity, and law enforcers may develop new approaches based on the findings of the study.

Policy development can also benefit from the study’s innovations and insights. Research such as this advances our understanding of how Bitcoin works and provides us with new methods with which to study it. These kinds of studies could prove crucial to shaping public and monetary policy that takes digital currency use into account.

In some countries there have been moves towards incorporating Bitcoin into mainstream payments services, such as through contracting vendors to accept Bitcoin payments or installing Bitcoin ATMs.⁹⁹ However, governments are legislating against Bitcoin use as much as they are legislating in favour of it. Understanding Bitcoin’s potentials and pitfalls will help legislators decide its public value.

This study also increases our understanding of consumption patterns and of factors that lead to consolidation in payment service provision. One of the researcher's findings was that fewer, but larger, sellers are coming to dominate the Bitcoin market. It would appear that existing consumers share information with potential consumers regarding how to use Bitcoin and which sellers to choose.

This has the potential to drive customers towards Bitcoin from other payments systems and marketplaces. The increasing monopolisation of the Bitcoin marketplace by particular companies has the additional effect of decreasing anonymity, since large sellers are more readily identifiable. In other words, the Bitcoin marketplace is changing, and this changing market changes Bitcoin itself.

Ethical issues

Digital research, whether carried out in person or remotely, presents a broad array of ethical challenges. Privacy protection was the major ethical issue to arise in this Bitcoin study. To protect users' privacy, the researchers designed the study so that they would identify known service providers, but not individuals. Sarah Meiklejohn comments:

"Our thinking was that we used public data, and as you say we identify users only by their Bitcoin addresses, and [intentionally] didn't identify any users who don't have a public-facing element (e.g., individuals rather than services)."¹⁰⁰

By limiting their analysis to known service providers, and focusing on flows of Bitcoins rather than individuals' transactions, the researchers largely avoided issues of individual privacy and consent.

However, data analysis does pose issues of consent and privacy, even if (relatively) public information is used. People often treat public forums and social media as though they are private, posting things that they would really rather the general public don't know.

Even where consent is given, it is not always clear that individuals will understand what they are agreeing can be done with their data. How will it be analysed? Will the data be adequately anonymised and stored? What will the findings be used for? Will the data or results be shared with third parties, and for what purpose? Will it be used to increase company profit or to deny rights to certain individuals?

People are right to be concerned: there are plenty of ways in which data can potentially be misused. In September 2015, a story broke about how Facebook secured a patent that would allow banks to make loans based on the credit history of their

entire social network.¹⁰¹

Theoretically, a bank could deny credit if an individual's friends had a bad credit history, even if the individual themselves was in good financial standing. While such actions may be unlikely, they point to the fact that few of us really understand the implications of data sharing and its effects on our financial lives.

Health insurance is another area of concern, and it is a good example of how social benefits can clash with social risks. Big data has the potential to provide enormous social benefits in the area of health care. If health care providers such as the NHS in the UK are able to access large amounts of data on public health, then they will be far better equipped to plan services for the future.¹⁰²

However, this kind of data is intensely private, and needs to be well protected. An example of misuse would be if insurance companies could use the datasets to positively identify individuals with chronic illnesses or who need expensive treatments and deny them coverage.¹⁰³

Researchers and professional associations are responding to these kinds of issues by developing ethical codes and guidelines for digital research. For example, the Data Science Association has produced the Data Science Code of Professional Conduct to help researchers think through ethical issues.

Various specialised books now exist on the subject, such as *The Ethics of Big Data: Ethical Reasoning in Socio-Technical Informatics*. But the issues are complex and are likely to become more so in the future. While it is crucial that researchers planning digital studies are up-to-date on current ethical practices and standards, it is equally important that regulators intervene to protect consumer rights.

Case Study 2

COMBINING ONLINE AND OFFLINE DATA COLLECTION ON PAYMENTS IN INDONESIA

American anthropologist Tom Boellstorff and his team carried out a study examining how online behaviours are affected by offline lives. They collaborated with two Indonesian research teams to learn how Indonesians were combining social media, mobile phone use, and payments systems, given that use of devices and the Internet was increasing rapidly.¹⁰⁴

The researchers chose this focus because device ownership, Internet access, and their use for online shopping had grown rapidly in Indonesia over the previous two decades. Due to the low price of SIM cards, many Indonesians have multiple smart phones with different providers so that they can obtain the cheapest calls possible. By October 2012, Indonesia had over 64 million active Facebook users, making it one of the top 5 nations in the world.

Indonesians use Facebook to connect with friends, but also to buy and sell consumer items through a variety of online stores and mobile apps. Boellstorff and his co-authors write that the International Data Corporation (IDC) showed the value of internet-based trade in Indonesia to have reached USD \$3.4 billion in 2011, and that a MasterCard survey in 2012 indicated that online shopping had increased 15% in six months.

However, credit cards played a relatively small role in trade: a Nielsen Online report showed that 57.4% of respondents were using online transfer methods for payment, but only 11.5% were using credit cards, and 13.1% preferred cash on delivery.

Boellstorff and his teams combined face-to-face interviews with analysis of the online purchasing and payments environments that people were using to gain insights into how people made purchasing and payment decisions. They focused on both the technology that people used and the social relations that shaped people's actions.

Method

The research took place in Surabaya (Java) and Makassar (Sulawesi). The researchers used qualitative methods including participant observation, individual semi-structured interviews, and focus groups. They supplemented these with the analysis of websites, mobile apps, and advertisements.

In Makassar, the researchers interviewed 54 respondents and conducted two focus groups with ten participants in each group. In Surabaya they interviewed 52 respondents and conducted four focus groups. All data were collected in Indonesian or in local languages and then translated into English by members of the research teams.

In each location the researchers sought to recruit a diversity of people from different social groups, including those who they thought would give a range of perspectives on mobile social media and mobile payments (such as university students and 'housewives'). The best-represented group were heterosexual

women, who are active in the world of online shopping in Indonesia.

The research teams held an initial meeting in September 2012, before research began, to decide on key interview questions to be included in all of the studies. The questions covered multiple dimensions of device use. For example, to identify time discrepancies between when people began to use devices and when they began actually shopping online, interviewees were asked the following questions:

- When did you begin using gadgets?
- When did you begin using the Internet?
- When did you begin making online transactions?

To investigate users' behaviours, including how people decided to become resellers and any problems with addiction to online shopping, the researchers asked:

- What motivated you to make transactions online?

In response to other studies that argue that online shopping almost always happens in combination with other activities (such as socializing or working), they asked:

- Are there particular times when you cannot shop online?
- What are you doing when online shopping?

People's reasons for using online transaction services tend to differ according to context. For example, while shopping may be popular in one country or among a particular social group, other services, such as remittances, may be more widely used elsewhere. To find out what people were using digital financial services for, without biasing their answers, the interviewers asked:

- What kinds of transactions do you make online (shopping, sending money, paying bills, etc.)?

To find out how people saw themselves using services in the future, they asked:

- Have you ever thought about stopping shopping online?
- Have you ever thought about reselling things that you purchase online?

Finally, in order to find out how people actually pay for goods, why they choose one payment mechanism over another, and whether they set aside special funds for online shopping, they asked:

- What funds do you use for shopping online? How do you or your friends pay for online shopping if you don't have money at hand?

For the online part of data collection, the researchers analysed websites, mobile apps, and advertisements. They collected

and assessed this online data by going directly to the websites in question. However, they note that it is possible to do interviews and focus groups online as well.

Data analysis was synthesised as part of the overall research process. Boellstorff comments:

“The key thing to remember is that the phenomenon being studied is already ‘synthesizing’ the online and offline before we ever got there. So synthesizing the online and offline in this case (and in practically every case of such digital research nowadays) is not an artificial imposition. Ideally it should reflect the specific ways that, in the case at hand, the online and offline are shaping each other.”¹⁰⁵

In other words, the ‘online’ and ‘offline’ research should not be treated as separate data sets that are collected independently of one another and then brought together for analysis. Rather, the online and offline data are inextricably linked. For example, interviewees might tell stories in which events take place in the home and simultaneously through social media.

Similarly, an observation of a person using an ATM must take into account the ‘real’ world, because factors such as time constraints and safety considerations will affect how they use that digital device. Moreover, people use multiple devices to achieve particular goals. Treating each digital interaction as distinct does not reflect how people use devices in the course of their everyday lives.

Findings

The research was designed to study the intersection of mobile phones, social media, and payments. As a result, some of their findings address digital consumer finance directly, while other findings address it indirectly through describing the context in which transactions take place.

Boellstorff and his team found that online shopping in Indonesia is made possible by the prevalence of devices. All of the interviewees owned more than one device, often a laptop, a BlackBerry, and at least one other smartphone. Due to the low cost of SIM cards and the advantages of using multiple providers, many respondents had multiple smartphones or SIMs; for example, one to keep in touch with a romantic partner and one for other friends, or one for personal use and one for business use.

At the time, BlackBerry was still the most commonly used handset. All of the respondents had a BlackBerry and often other kinds of smartphones as well. One interviewee had five smartphones, each with a different provider.

The reasons why people began to shop online rather than in physical retail stores varied. The researchers found that respondents became interested in online shopping after seeing items their friends had purchased. They explain:

“This reflects a broader pattern in which friends and acquaintances play an influential role in online shopping practices not just as recommenders, but increasingly as customers and sellers.”

Buyers often knew sellers personally or at least lived in same

city, meaning that they could choose sellers based on personal knowledge or recommendations. This also made it easier to complain if there was a problem. Buyers often did not have to pay for shipping because items would be hand-delivered. Their buying practices therefore often mimicked shopping in physical stores.

Facebook was often the first pathway to online shopping because respondents would see sponsored advertisements, information posted by friends on their own time lines, or comments customers had posted on the Facebook pages of sellers. Alternatively, people would be introduced to online shopping through the BlackBerry store app.

Once interviewees had begun to shop online they identified numerous advantages. The five primary reasons that respondents gave for wanting to shop online were: 1) it is easy; 2) interesting things are sold in online stores; 3) it avoids the hassle of going to a physical store; 4) it is often cheaper; and 5) some items are hard to find in physical stores.

We often think of online shopping as something done by individuals or households, but the researchers found that groups of friends would also make collective purchases. For example, they discovered that groups of university students would purchase food (such as snacks) in bulk to receive lower prices.

The amount of money interviewees spent online monthly varied from less than \$1 to around \$50. This sum reflects people’s disposable incomes, but also their feelings about online shopping. Concerns about losing money tended to limit how much money people were willing to spend online.

As well as concerns about fraud, people worried that the items they bought would not match the online photographs or description and that they would be disappointed with their purchases. To counter this, one woman set a 500,000 rupiah (USD \$50.50) limit on purchases. Beyond this limit she felt uncomfortable and preferred to make the purchase in a physical store.

Some people also earmarked funds to be spent on online shopping. One interviewee, a man called Eska, gave his monthly salary to his wife to manage (a common practice). He had a separate bank account for his own expenditures (‘men’s money’) that was funded primarily by workplace bonuses rather than his salary.

When he shopped online he always used this account, even when his wife asked him to buy something for her. In practice, then, it wasn’t just his ‘men’s money’; it was also the household’s online shopping account.

In terms of making payments, the researchers discovered that only six respondents used Internet banking services to make a payment, and only five respondents used a credit card. Instead, the vast majority of their respondents were paying for online shopping by making a transfer at an ATM or a bank counter. The main banks they used were BCA and Mandiri; only five respondents used BNI.

Why use an ATM rather than make an online transfer? Some interviewees said that they were worried about credit card fraud, but the main reason cited was to avoid bank fees. If the

buyer and seller used the same bank, the transfer could be made for free.

In fact, some sellers had accounts at multiple banks to ensure that their buyers could transfer them money with no extra charge. Some buyers reported that if they didn't have the same bank account as the seller, they would ask a friend or relative to complete the transaction for them. Note the pattern: we see a cost-savings behaviour taking place at both the ATM and the SIM card level, since, as noted, many Indonesians have multiple SIMs in order to save money by switching SIM cards depending on whom they are calling.

People sometimes used other people's credit cards, but that could create secondary problems. For example, one gay man reported that he preferred shopping for makeup online because he felt safer than when visiting a physical store. In order to pay for his purchases he used his mother's credit card. However, he was concerned about his privacy here, because his mother could then see on her statements what he had been buying.

Online BlackBerry shops were sometimes used to both make *and* complete transactions. Interviewees stated that they preferred these shops because sellers would be identifiable by their BlackBerry PIN. They also tended to be more familiar with the sellers and had friends in the system that could provide recommendations. Moreover, BlackBerry Money allowed peer-to-peer cash transfers, which interviewees perceived as safer than using a credit card.

Applications

The team's combination of online and offline data collection has many potential applications in product design and marketing. For example, there could be opportunities to develop consumer finance products that reduce the costs of making transactions.

Consumer decisions are influenced by various factors: they may identify with the brands of their devices, their mobile phone carriers, or be swayed by the preferences of their friends and family. These identifications influence consumer decisions in different ways, and at different times. The combination of in-person ethnography and examination of digital sources used in this study is useful for finding out how people use products within real-life contexts.

Many of the study's participants reported having to put in a significant level of effort to complete payments, often maintaining multiple bank accounts to lower costs. The BlackBerry store presents a way to overcome some of these costs by smoothing out the transaction process.

However, as other brands are displacing BlackBerry handsets, customers will require other channels to make payments. Knowing where the pain points lie for customers, and which device to use when making a transaction, can assist in the identification of appropriate payment channels. We also see cost-saving behaviours that cross over between devices and services—in this case, ATMs and mobile phone SIMs.



Figure 13

Risk is another important area for product design and marketing. This study shows that consumers assume they are taking a certain level of risk when shopping online. They attempt to offset risk by using known providers and channels for their purchases, or through seeking advice from people they trust.

Building social proof into product design, such as through peer-to-peer transfers or permitting product recommendations from friends, could be leveraged to increase trust and encourage the use of particular payment channels.

Ethical issues

Most of the ethical issues raised in this study are the same as in any other face-to-face study. These include:

- Giving potential participants sufficient information about the study so that they can make an informed decision about whether they would like to take part
- Ensuring, as much as possible, that participants are not at risk of physical or emotional harm during the study
- Anonymizing data so that participants are not identifiable, unless they have given specific permission

However, as with the Bitcoin study described above, the 'digital' nature of the research raises extra points of consideration. Boellstorff reports that one big issue he has encountered is that some researchers think that because something is online it is not 'real' and so you don't have to protect people's identities.

For example, data gained from a public forum may be technically traceable, but if it is reproduced without permission, researchers have a responsibility to generalise the data into findings that are not traceable.

Another important issue in digital research is that social media tends to make people more visible, and so it can make anonymisation and consent more difficult. Say an interviewee is demonstrating how they make a purchase in a BlackBerry store. When they show the researcher their own information, they are also likely to expose information about the people they are transacting with. These third parties have not given consent to take part in the research, and extra effort must be taken to discuss and record this data in the most general terms.

Safety issues may also be a consideration when studying money use. Following participants as they go about their daily tasks can yield valuable insights into their use of consumer products, but a foreign researcher accompanying a participant to an ATM may attract unwanted attention. These are not necessarily problems that were raised in this particular study, but they need to be considered at the outset and built into project design.

More about the method

Research Methods and Global Online Communities: A Case Study by Alexia Maddox (2016, Routledge)

The Data Analytics and Digital Financial Services Handbook (2017, IFC and Mastercard Foundation)

Internet Communication and Qualitative Research: A Handbook for Researching Online by Chris Mann and Fiona Stewart (2000, SAGE)

Advancing Digital Humanities: Research, Methods, Theories by Katherine Bode and Paul Longley Arthur (2014, Palgrave MacMillan)

Ethnography for the Internet: Embedded, Embodied and Everyday by Christine Hine (2015, Bloomsbury)

The Routledge Companion to Digital Ethnography by Larissa Hjorth, Heather Horst, Anne Galloway and Genevieve Bell (2017, Routledge)

'Algorithms as culture: Some tactics for the ethnography of algorithmic systems' by Nick Seaver (2017, *Big Data & Society* 4 (2): 1-12).

Ethnography and Virtual Worlds: A Handbook of Method by Tom Boellstorff, Bonnie Nardi, Celia Pearce and T.L. Taylor (2012, Princeton University Press)

Readings in Virtual Research Ethics: Issues and Controversies edited by Elizabeth A. Buchanan (2004, IGI Global)

How Would You Like to Pay? How Technology is Changing the Future of Money by Bill Maurer (2015, Duke University Press)

EXPERIMENTS

The use of experiments in consumer finance research grows out of behavioural psychology and experimental economics.¹⁰⁶ Consumer finance experiments reflect the concerns of both these disciplines, especially regarding how people make choices and whether financial behaviours fit with standard economic theory.

An important precursor to consumer finance experiments was the development of modern game theory, the study of strategic decision-making, by John von Neumann and Oskar Morgenstern in the 1930s. Game theory lent itself more readily to experimentation than theoretical microeconomics or macroeconomics because it was concerned with how people make choices under specific scenarios.

Experimental researchers try to model the different ways in which people make decisions. These models can help with things like structuring financial literacy programs, identifying social sectors that might be at risk of getting into debt, and providing people with better information so that they can make better choices.

Experimental methods, in particular Randomised Controlled Trials (RCTs), are also the cornerstone of evaluations, which provide a way to rigorously assess the success of a particular program or product.

WHAT IS IT?

- Quantitative
- Conduct experiments under controlled conditions
- Data is collected in a lab or in the field

Experiments involve testing hypotheses under controlled conditions through the manipulation of key variables. They can take the form of **lab experiments**, which are carried out under controlled conditions, or **field experiments**, which take place in a context that is largely natural.

While lab experiments are fairly well known, field experiments are less so. They generally involve running interventions or treatments on people as they live their daily lives. It is more difficult to control experimental conditions in field experiments than in lab experiments, but they can provide a more realistic picture of behaviour.

Lab experiments

In consumer finance research, lab experiments are often concerned with testing the psychological components of consumer finance, especially risk-taking behaviour and how people make choices.

In lab experiments the researcher(s) first devise a hypothesis, then they design an experiment to test it. They identify at least one independent variable (an event, e.g., opening a bank account) and one dependent variable (measurable effects, e.g., saving more money).

Lab experiments take place in a location that is under the control of the researchers. This is normally a laboratory or room in the researcher's institution or workplace, but lab experiments can be carried out anywhere the researchers can gain a reasonable degree of control over the environment.

For example, a café or park would probably not be suitable for a lab experiment, but an empty room in a school, house, or public building might be sufficient. This is important because it means that researchers are able to travel to the people they would like to study in order to undertake lab experiments, just as with field experiments and natural experiments. Experimental research does not always require participants to travel to the lab at the researcher's place of work.

Field experiments

Field experiments involve real-life testing of a hypothesis or intervention. Like lab experiments, field experiments are about testing and measuring behaviour. But unlike lab experiments, which take place under controlled conditions, field experiments are carried out under everyday circumstances and test the impact of an intervention, product, or policy.

In the field of socioeconomic development, a particular kind of field experiment is used widely: the Randomised Controlled Trial (RCT). RCTs are considered to be the 'gold standard' of hypothesis and impact testing.¹⁰⁷ Derived from biomedical and epidemiological clinical trial methods, RCTs evaluate and measure impact by comparing the effect of an intervention in a treatment or target group against a control group that does not receive the intervention.

RCTs are valuable because they can reliably test the effectiveness of consumer finance initiatives, especially in microfinance or the introduction of new financial products by banks and other financial institutions. As noted in the IPA RCT toolkit, experimentation can be built into the design of products and services. Some financial RCTs, such as experiments with cash grants or financial literacy training, may include physical and psychological health and well-being components.

A standard method to carry out an RCT is to plan an intervention in a particular place, such as lending money to women in a particular town, and set up a control group in another town. Careful randomisation of the study population to be studied is crucial to the design. This is important for claims that can be made about measurable outcomes due to the effects of a product or intervention, and not other factors or individual/group characteristics.

Field-based experiments may use other experimental methods for comparison than randomisation, applying a variety of statistical techniques to control for differences, but these often involve making assumptions that are more difficult to test

than if randomisation is used in advance.¹⁰⁸ Determining the appropriate sample size in order to observe a particular effect is also crucial to the technical design. The larger the sample size, the more visible a small effect will be.

A simplified explanation of the basic setup is as follows. At the beginning of the evaluation, both groups will be surveyed. The test group will be given the intervention, but the control group will not. At the end of the intervention, both groups are surveyed again. The results are analysed to show the effects of receiving or not receiving the intervention.

For example, a field experiment in Malawi, conducted by Xavier Giné and Dean Yang, tested whether the provision of insurance induces farmers to take out loans.¹⁰⁹ The researchers selected a sample of 800 farmers and offered them credit to buy high-yielding seed. Half of the farmers were required to purchase insurance to receive this credit. They found that farmers were less likely to take up credit if they were offered insurance with their loan. These kinds of experiments are valuable because they involve people making real-life decisions.

A variation on the field experiment is the *natural experiment*. These resemble field experiments, but there is no intervention. Researchers simply measure the things that people are already doing. One such study in India used loan repayment data to investigate the optimal structure of a microfinance loan.¹¹⁰

They compared people who had repaid individual loans in full (the treatment group) with people who had an ongoing individual liability loan, but who would eventually convert to group liability due to a change in policy in the lending institution (the control group).

By watching how customers changed their borrowing practices as their loan type transitioned, the researchers were able to infer which loan structure worked the best.

STRENGTHS

Permit control of variables

Because experiments take place under controlled conditions, and since lab experiments are normally run in the researcher's institution or place of work, it is generally possible to limit the number of variables that impact the experiment. Again, this is particularly true for lab experiments. It can be difficult to control for variables in field experiments, since they take place in 'natural' settings.

The control of variables means it is possible to make accurate measurements and identify 'cause and effect' relationships (e.g., that opening a bank account leads to greater savings) within certain statistical parameters. These kinds of observations are generally not possible with non-experimental methods because the effect (in this case, increased savings) could be caused by any number of factors.

However, it should be noted that this ability is dependent upon solid research design and execution. It is often difficult to isolate variables and limit external influences in a study.

Experiments are replicable

Experiments are generally more replicable than non-experimental research because they operate under controlled conditions, use limited variables, and allocate participants randomly to test groups and control groups. This means that is

Examples of use

- For a range of experiments on choice, risk, reactions to pricing structures, and other aspects of economic behaviour, visit the Centre for Economic Learning and Social Evolution (ELSE) website.¹¹¹
- A natural field experiment in the Netherlands tested whether the rich are more pro-social than the poor. The researchers deliberately mis-delivered mail with cash or bank transfer cards and tested whether subjects returned them or not.¹¹²
- In an online user interface experiment, researchers tested whether people would donate more money to charity with default amount presets or when active decision-making was done. Their main findings support default presets.¹¹³
- Economists undertook a natural experiment in Singapore using a panel dataset of consumer financial transactions to study how consumers responded to an unanticipated income shock.¹¹⁴
- An article called 'The social dilemma of microinsurance: Free-riding in a framed field experiment' explores incentives for free riders in joint liability health insurance in Tanzania.¹¹⁵
- The Institute for the Study of Labour published an article on how two different insurance products and a secret saving device impact solidarity among rural villagers in the Philippines.¹¹⁶
- Johannes Haushofer and Jeremy Shapiro used an RCT to measure the response of poor rural households in rural Kenya to large temporary income changes in the form of unconditional cash grants.¹¹⁷
- A study implemented by Innovations for Poverty Action shows how a commitment savings product led to increased savings and more decision making power in the household for women.¹¹⁸
- A natural experiment carried out in India investigates the optimal structure of a microfinance loan.¹¹⁹
- A field experiment in Malawi, conducted by Xavier Giné and Dean Yang, tested whether the provision of insurance induces farmers to take out loans.¹²⁰
- A large natural field experiment identified the effects of formal savings on inter-household transfers and the safety nets of the poor in villages in Malawi.¹²¹

possible for other researchers to confirm or challenge a study's results. It also means that studies can be readily compared across different groups. Again, this is more true for lab experiments than it is for field experiments, since real-life conditions can change rapidly and make repeat experiments impossible.

These features contribute to the development of general models and theories (such as the effects of asymmetric information on decision-making), the behaviour of specific populations (such as stock market use by elderly investors), and dynamic inconsistency (how people's preferences change over time).

Nevertheless, researchers need to be aware that, while it is relatively straightforward to replicate experiments, the results can differ significantly depending upon the variables tested and sample choices. This can limit the external validity of an experiment—how generalisable is it to the results of other studies, to other situations, and other people?

For instance, evaluation may be limited to places or regions where there is visible variation; that is, where a new program is expanding into, and not within, a particular region. This means that you can usually only evaluate a kind of marginal impact, not infra-marginal impacts. It is also important to conduct careful pilot studies when setting up an RCT. Testing results through multiple studies can strengthen generalisability.

RCT field experiments demonstrate impact

An advantage of RCTs is that they can be used to demonstrate whether (or to what extent) an intervention does or does not have the hoped-for impact. This is why they are used extensively for the purpose of evaluating programs carried out with people in the area of socio-economic development.¹²²

In fact, David Roodman, in his book *Due Diligence: An Impertinent Inquiry Into Microfinance*,¹²³ argues that RCTs are the best way to test whether microfinance programs work. Monitoring and evaluation is a large and important field with an entire methodology of its own, and people who are interested in developing their skills in this area have a wide range of materials and courses to choose from. IPA's toolkit also offers helpful guidelines for identifying and developing partnerships for evaluating financial products in the US based on its expertise in RCTs in developing nations.

LIMITATIONS

Design flaws can invalidate experiments

The effectiveness of experiments is dependent on solid research design. *Confounding effects* or *confounding variables* are variables that the experimenter failed to control and which compromise the validity of the experiment. This is true for all kinds of experiments, whether they take place in a lab or in the field.

While design flaws are a problem in all research, qualitative methods tend to be more forgiving when problems arise. For example, if analysis of a set of interviews shows that a crucial

question has been omitted, researchers may be able to make further inquiries to fill the gap in their knowledge by asking participants directly for clarification. This is not generally possible with experiments. To be valid, the entire experiment may need to be run again if an error or omission occurs.

However, in rigorous lab research, as well as RCT experimental studies, researchers check for lack of balance, spillover effects,¹²⁴ and other unexpected issues in the randomisation process over the duration of the study. Researchers adjust or re-randomise accordingly, where possible.

Other design threats to the internal validity of an RCT study include noncompliance in the treatment group(s), spillover effects that impact the control group, or participants who drop out of the study, which affects project outcomes and can lead to missing data in the final phase of evaluation.

Results may not reflect real life behaviours

The artificial nature of experiments can produce results that are unlikely to occur in real life. This can even be true of field experiments, even though they take place in real-life settings. It is not the case for natural experiments, since they are by definition the study of real-life behaviours.

One reason why experimental behaviour may not reflect real-life behaviour is that experimental subjects may be conscious that they are being watched, and this may make them more likely to follow moral norms or make more rational decisions than in real life. This is known as the 'Hawthorne Effect'.¹²⁵

The Hawthorne Effect changes depending upon whether your research participants are interacting with each other or not. Say that in a lab-based study each of your participants completes an experiment alone, entering responses anonymously on a computer. Their answers may be affected by what they think the researchers are looking for, but they are unlikely to be directly affected by peers, since their fellow participants are not observing their choices.

In contrast, lab-based experiments that require participants to interact with each other give rise to a number of methodological problems that have been closely observed and are well understood.¹²⁶ In cases where participants are anonymously interacting with other participants, their decisions can be anti-social: people will often act in their own benefit, not for the benefit of the group.

In cases where interactions between participants are not anonymous, the same experiment can produce very different results, as people are often more likely to cooperate and behave generously when they have to interact directly. Overall, experimenters find that repeated interactions cause subjects to eventually start cooperating, and that their cooperation increases mutual benefit. This is also something we observe in the real world.

The degree to which lab-based experiments do or do not reflect real life behaviours can be mitigated to some extent by a careful design that considers these kinds of influences.

It can be difficult to form a representative sample

Sometimes it is difficult to recruit participants that are representative of a sample of the population under scrutiny. This is equally true for lab experiments and field experiments. This is partly because the resources required to run experiments are often limited, but also because it can be difficult to persuade people to take part in such studies, especially when they are required to travel to the site of the experiment.

One way of lessening recruitment issues is to offer monetary awards, but these can interfere with representativeness. Some behavioural economics experiments use financial incentives to attract participants, such as through playing games with real money. Students are often used because \$1 usually means more to a student than to someone on a stable income, and so experiments can be run for less money.

However, students sometimes access the experiment several times to earn more money, even though this is against the rules. This undermines the fundamental assumption of the experiment and reduces its representativeness.

Another common method of recruiting subjects is to give study credit to college students who take part. While this is a great way to gain the required number of participants, it does not solve the problem of representativeness. This is particularly the case for experiments carried out with so-called WEIRD subjects (Western, Educated, and from Industrialised, Rich, and Democratic countries).¹²⁷

Using a control group can eliminate this bias. If participants are distributed randomly between each group, then differences between results from each group will have nothing to do with them being students.

While moving a lab to the field can help offset some of these concerns, anyone wishing to perform a lab experiment is advised to read up on the many ways that biases can be introduced in real life settings.

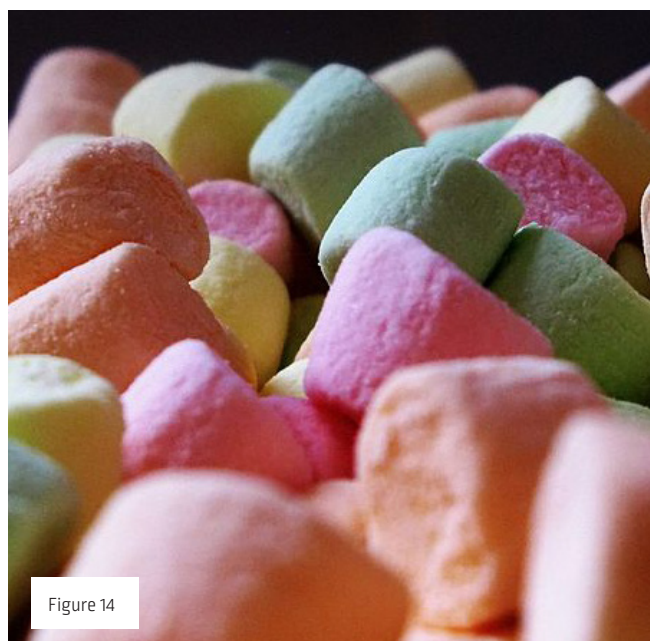


Figure 14

LIMITATIONS SPECIFIC TO RANDOMISED CONTROLLED TRIALS

A number of issues specific to RCTs should be given particular attention when RCT experimental design is part of a research methodology. RCTs can be costly or require multiple studies in different places in order to provide persuasive results for service providers or policy circles. Practitioners of this method are often asked about the ethics of withholding information, resources, or services from a control group.

For those who do receive the treatment there is also the possibility of 'intervention fatigue'. This is especially true where the same study populations are targeted for multiple and frequent interventions because of where they are located or due to the kinds of services being rolled out.

Other kinds of tensions may be generated in treatment groups if interventions are perceived as yet more handouts or as interference from powerful outsiders. And what happens after a study has finished? Long-term follow-up is not always possible, limiting study participants' ability to give feedback, or researchers the opportunity to analyse impact over a longer period of time.

There are a number of ways to address these limitations within and outside the RCT research design. For instance, many RCTs phase in a particular product or service as part of the experimental design.¹²⁸ The group that receives the intervention at a later time serves as the control group for the treatment group in the first phase of the study.

In the case of financial products and services, there are legal, regulatory and consumer protection requirements regarding what information and services can be withheld or offered to some, but not all members/clients of a financial institution, as well as what incentives can be offered.

RCTs may also be supplemented by qualitative research, such as ethnography. Researchers can (individually or in partnerships) incorporate participatory fieldwork, multiple visits, and other forms of interaction into the study design. Because ethnography brings researchers into the daily spaces and concerns of research subjects, researchers' assumptions about how things are working or not—and why—may be challenged and their conceptual categories unsettled.

These kinds of data are often missed in quantitative data collection. They can yield crucial insights for understanding issues of reception and uptake, and the kinds of changing interrelationships that are relevant to the intervention that is being tested in an RCT.

Case Study 1

UNDERSTANDING RISK PREFERENCES AND TIME PREFERENCES

Risk and time are important topics in consumer finance. Whether people are risk-takers, risk-averse, or loss-averse impacts all kinds of decisions, including taking loans, buying insurance, and making investments. Consideration of time frames is just as important: financial planning involves thinking ahead, and how people perceive time is crucial for making good plans.

Less discussed is the fact that risk and time are intertwined. For researchers wanting to understand financial behaviour, it is crucial to be aware of how time can affect people's judgement of risk.

Most studies of financial decision making over time, including prospect theory, claim that people are so geared towards the present that they will make decisions that are counter-productive in the longer term.

For example, say you are offered a choice between \$100 now or \$120 one week from now. The latter choice is generally the most rational, but many people choose to take the money now rather than wait. Why might this be the case? One reason why people make this decision might be that their assessment of their current needs and desires outweighs their assessment of their future needs and desires. This is called 'present bias'.

The most famous experiment of this kind was the Stanford marshmallow experiment into delayed gratification in the late 1960s and early 1970s. In this experiment, researchers gave children marshmallows and told them that they could eat it straight away, but if they waited for 15 minutes they would receive a second marshmallow. The researchers then left the room. A minority of participants ate their marshmallow immediately.

In follow-up studies, the researchers found that children who waited had better life outcomes. However, the economists James Andreoni and Charles Sprenger ran a series of lab experiments that contests this finding. They present their results in an article called 'Risk preferences are not time preferences' (2012).¹²⁹ In this article they give an alternate explanation for why people might choose to take a smaller benefit now rather than a larger benefit in the near future.

Method

Andreoni and Sprenger ran experiments with 80 undergraduate students at the University of California, San Diego. Students participated in four experiments, which took an hour each. The researchers used a method called Convex Time Budgets (CTBs) in which participants allocated a budget of tokens towards receiving an early payment (in seven days' time) and a later payment (in 28 or 56 days' time).

The researchers varied the probability of payments being delivered and the interest paid on later payments. Participants had to choose between money sooner (to be delivered to them in a week) and money later (to be delivered to them in either

28 or 56 days). Students also received a basic participation payment, of which half was delivered in the first payment and half in the second payment. Andreoni and Sprenger explain:

"For all payments involving uncertainty, a ten-sided die was rolled immediately after all decisions were made to determine whether the payments would be sent. Hence, p1 and p2 were immediately known, independent, and subjects were told that different random numbers would determine their sooner and later payments."

An important part of research design was to minimise uncertainty based on confounding variables, such as whether a payment would accidentally go missing. To achieve this, experimental participants were chosen from among students living on campus who had 24-hour access to locked personal mailboxes in their dorms.

The researchers took care to explain the process of payment delivery thoroughly so that students would be confident that they would receive their payments. In fact, a companion survey showed that students had 100% confidence that their payments would be delivered. So, it is reasonable to assume that confounding variables were limited, and the decisions that the students made during the experiment were not affected by extraneous influences.

A major advantage of this design is that it allowed the researchers to test whether students made decisions based on risk or time: that is, were they failing to delay gratification, or were they taking risk into account?

Findings

Andreoni and Sprenger note that, according to discounted expected utility (DEU) models, participants should allocate their money according to relative risk, distributing the payment between the two delivery times:

"...if a sooner reward will be realized 100 percent of the time and a later reward will be realized 80 percent of the time, then intertemporal allocations should be identical to when these probabilities are 50 percent and 40 percent, respectively."

However, they found that their participants only behaved in this way under conditions of uncertainty. For example, when two options have the same degree of uncertainty (for example, a 50% chance of Payment 1 being delivered and a 50% chance of Payment 2 being delivered), then participants would allocate their payment between these two events.

When conditions were certain, participants behaved differently. In fact, "85 percent of subjects violate common ratio predictions and do so in more than 80 percent of opportunities." There was little consistency in how participants allocated the delivery of money under conditions of certainty, and they did not seem to prefer sooner payments.

Instead, it appears that people were responding to changing levels of risk. Andreoni and Sprenger point out that, for most

of us, the present is certain because it is already happening, while the future is risky because it is difficult to say what will happen. They say:

“Allais (1953, p. 530) argued that when two options are far from certain, individuals act effectively as expected utility maximizers, while when one option is certain and another is uncertain a ‘disproportionate preference’ for certainty prevails. This intuition may help to explain the frequent experimental finding of present-biased preferences when using monetary rewards ... That is, perhaps certainty, not intrinsic temptation, may be leading present payments to be disproportionately preferred.”

Hence people may not be biased towards the present at all, but are instead risk averse.

Applications

This case study has valuable implications for experimental design. In experiments, if you don’t control for the fact that the future looks more risky than the present, then people will make decisions that appear to be ‘present-biased’ when they are actually making a risk-averse decision.

For example, say you are one of the children in the famous Stanford marshmallow experiment. How do you know that the researchers will really give you another marshmallow? If you invest money, how do you know that it will pay off? The future is uncertain and anything could happen: a financial crisis may wipe out your investment or the marshmallow supply. People who are risk-averse may decide that it is better to take an immediate reward than to depend upon a bigger reward in the future.

Experiments like these have also been valuable in testing the validity of economic models. They have clear real-life implications in consumer finance, such as for understanding how people will be affected by time considerations, the risk of receiving or not receiving a payment, and the effect of interest rates.

Ethical issues

Many of the ethical issues that arise in lab experiments are the same as in all research involving human subjects. Psychological harm is the most common type of potential harm in non-medical research, that is, creating situations that lead to embarrassment or anxiety. Researchers can help to reduce harm by providing sufficient details of the study and giving participants the option to skip questions they are not comfortable with or to leave the study altogether.

Issues can also arise from the objectification of research participants: treating them as merely research material rather than as human beings. Maintenance of privacy and confidentiality is another issue, and steps need to be taken to protect privacy during all phases of the research, including data collection, analysis, data storage, and the publication of the results.

Experiments also involve some considerations that are generally not present in other kinds of research.¹⁹⁰ Experiments with human subjects depend upon isolating a variable that is tested under laboratory conditions. It may not be possible to tell participants exactly what the study is trying to test, because they may change their behaviour to fit in with the experiment, and this will render it invalid. This lack of information makes it difficult for participants to give informed consent.

Deception can also harm experimental research in a more general sense, since it can erode trust and make people unwilling to volunteer for a study. Moreover, some researchers claim that it can alter participants’ behaviour in future studies, thus compromising results for other researchers.

Another issue with experiments on human subjects is that they often depend upon students to participate. Apart from the fact that students are not usually a representative sample of the population at large, there are also issues of coercion to consider.

In cases where students are required to participate in experiments as part of their course evaluation, or are offered extra credit, their choice to participate or not has essentially been removed. Moreover, paying students to participate can be problematic, given that poverty can drive people to accept options that they would otherwise reject.



Figure 15

Case Study 2

MICROFINANCE GAMES: GROUP LENDING VERSUS INDIVIDUAL LENDING IN PERU

Lab experiments do not have to be carried out in the headquarters of a company or organisation. They can be carried out in settings that resemble the 'field', so long as the researchers are able to control the experimental conditions to a satisfactory degree.

In the mid-2000s, a group of researchers working for the Financial Access Initiative and Innovations for Poverty Action carried out ten microfinance games in an experimental economics laboratory in urban Peru.¹³¹ The resulting article by Xavier Giné, Pamela Jakiela, Dean Karlan, and Jonathan Morduch describes the experimental process and results.

Many microfinance agencies only engage in group lending, and not individual lending, because lending to a group significantly lowers the risk of making loans within low income communities. In group lending, individual borrowers guarantee each other's loans. Rates of repayment are generally high, at around 95%.

And yet the fact that group lending regularly out-performs individual lending is puzzling because group lending comes with problems of its own. For example, group lending is vulnerable to free riding because it is potentially easier for an individual to default against their group (who will cover for them) than against a bank. Whereas an individual who defaults runs the risk that the bank will not lend to them again, with group liability it is easier to maintain access to loans.

Does joint liability really encourage such moral hazards? To find out, the researchers set up a series of experiments that explored the impact of individual and group lending mechanisms on investment decisions. The purpose of these experiments was to show how liability affects whether people made risky or safe investments.

Method

The team set up a makeshift experimental economics lab in an empty room in a marketplace in urban Lima, Peru. They chose the location to attract participants whose profiles resembled those of microfinance customers.

The researchers recruited participants using two methods: employing delegates from the local association of micro-entrepreneurs to invite vendors to specific game sessions, and allowing participants to bring friends to subsequent experimental sessions.

Over seven months, the team ran ten experimental games an average of 29 times each. The games consisted of multiple rounds of borrowing and repayment. The researchers observe that playing a sequence of games with the same individuals allowed them to control for individual's risk preferences and assess the impact of each lending mechanism on risk-taking and loan repayment.

The researchers changed the variables in each of the ten games in order to assess the effects of different circumstances that mimic the actual conditions of microfinance programs. These included individual versus joint liability, dynamic incentives or no incentives, and the amount that players were allowed to communicate or to observe each other.

In each round of the games, the researchers explained the rules in Spanish. The participants were given 'loans' of 100 points and were asked to invest their points into one of two projects: either a safe project with a certain return of 200 points, or a risky project that paid 600 points with a probability of one half. They were given game sheets on which to mark their choices. If a borrower's project succeeded they would repay their loan, but if their project failed they would not be able to repay. At the end of each session, participants were paid a fee (in real money) for showing up and another fee for every treatment they had taken part in.

The researchers also conducted a census of the vendors in the market, which allowed them to compare their experimental group with the general market demographic and work out whether they were representative of this broader population.

Findings

The researchers found that subjects were more likely to make riskier investments when they had joint liability because, in the event that their investment failed, the other members of the group would look after their debt. They observe:

“Risk-taking broadly conforms to theoretical predictions, with dynamic incentives strongly reducing risk-taking even without group-based mechanisms. Group lending increases risk-taking, especially for risk-averse borrowers, but this is moderated when borrowers form their own groups. Group contracts benefit borrowers by creating implicit insurance against investment losses, but the costs are borne by other borrowers, especially the most risk averse.”

However, cutting off defaulting borrowers from future loans greatly reduced risk-taking behaviour. Based on their observations and the work of other researchers, the authors suggest that joint liability is not always necessary to maintain high repayment rates. They state:

“Given large enough incentives to avoid default, borrowers will choose safe projects and repay their loans.”

Hence it is not possible to conclude that joint liability is better than individual liability or vice versa. Rather, how each kind of loan structure affects repayment and risk-taking depends upon how the contracts are structured.

Applications

Microfinance experiments have clear implications for policy, commercial operations, and the design of development programs. In fact, field-based lab experiments such as these have influenced microfinance institutions (MFIs), which are increasingly shifting towards individual liability loans with time-based incentive structures.

The researchers also point out that the question of whether contract structure inhibits risk-taking is important for policy development. Evidence suggests that most microfinance loans have a limited effect on the growth of businesses. If this is the case, perhaps contract structure could be altered in such a way that it encourages a level of risk-taking that is suitable for setting up a successful business.

Field-based lab experiments can be fruitfully combined with other methods to broaden their findings and applicability. Whereas the lab experiments in Peru demonstrate the effects of collective action on individual behaviour, ethnographic studies could describe the mechanisms by which collectives operate.

For example, anthropologist David Stoll's research on debt in a Mayan town in Guatemala unravelled the puzzle of how an entire town became heavily indebted to lending institutions and to each other [see Case Study 2 in Ethnography]. Similarly, Caroline Schuster, in her ethnographic research on microfinance in Paraguay, describes how joint liability loans, in which the entire group is responsible for paying back their debt, uses social relations as collateral in the absence of other viable forms of guarantee.¹³²

Ethical issues

Because this experiment is essentially a lab experiment that takes place in the field, the ethical issues it raises are largely the same as in the first case study in this section. However, the fact that it takes place in the field does raise some additional ethical issues.

To recruit participants, the researchers used a technique known as 'snowballing': asking participants to invite their contacts to participate. Methodologically, non-random selection of participants did not pose a problem to the internal validity of the study. Ethically, snowball sampling can sometimes pose problems if people feel pressured to participate.

But here, as for all of the methodologies discussed in this Toolkit, Institutional Review Boards place special emphasis on the provision of information and the justification of which subjects are recruited to participate in a study. The researchers provided recruited participants with detailed information about the study and ensured that participants individually consented to participating in the research.

Case Study 3

RANDOMISED CONTROLLED TRIAL ON IMPROVING THE FINANCIAL CAPABILITY AND SAVINGS OF WOMEN IN INDIA

In research and policy circles, increasing attention is being directed at closing the still significant gap between women and men globally in terms of income, wealth, and access to formal financial services. Improved savings is a priority for many women and is of particular interest for consumer finance research.

Research shows that women are key actors in making financial decisions for the household.¹³³ Women use much of their available income for household consumption, children's school fees, and education, while also striving to put small amounts aside. But women often have limited power in allocating husbands' income or may struggle to safeguard what little they can save from the demands of husbands, family, and social networks.

Formal financial inclusion initiatives are using field-based experimental design and RCTs to test the impact of formal financial tools and products on women's ability to channel savings. What is the relationship between the introduction of a new financial tool (such as a savings device) and improved savings?

IMTFI researchers Deepti Kc and Mudita Tiwari conducted a field-based experiment with poor women who were part of Self Help Groups (SHGs) in Bihar, eastern India, to test if a simple savings tool—a lock box and key—could improve poor women's capacity to save.¹³⁴

Kc and Tiwari's work on gender and financial literacy has spread across multiple projects that served in some respects as pilot studies for the case discussed here. In Mumbai they examined women's practices of storing and hiding money using a variety of informal means. Women did not trust banks and often were unaware of the formal financial services or products available to them.

To address these issues, Kc and Tiwari developed context-specific financial education modules using a comic book story-telling format. Modules illustrated financial concepts and scenarios of spending and saving, using characters and real life challenges that the women could relate to.

The researchers then tested the financial literacy tools in New Delhi with migrant labourers. Both projects demonstrated the effectiveness of the financial education tools in women's perception of banks and their desire to save.

However, the women's ability to meet savings goals was often limited due to their lack of a more formal saving device. This led Kc and Tiwari to design a field-based experiment in Bihar to test if financial education, accompanied by an alternative savings tool, might positively impact women's ability to build up savings.

Method

Inspired by a randomised controlled trial in Kenya that introduced a lock box to women market vendors and male bicycle taxi drivers, KC and Tiwari set out to test the effectiveness of both financial education and savings tools beyond the question of bank access.¹³⁵ They hypothesised that financial education was important, but insufficient if not accompanied by appropriate savings products.

The researchers incorporated quantitative and qualitative methods within the RCT design. The study population was randomly selected from seven villages in the Gaya district in the state of Bihar, eastern India, each of which had community SHGs (external validity).

The majority of participants came from households depended primarily on non-agricultural labour, with agricultural labour, smallholder farming and government payments also representing sources of income. All of the women participated in SHGs, and 85% deposited savings with their groups. But women were only saving Rs 10, which was the minimum amount required for membership eligibility. With membership in the SHG, women were eligible for other benefits from government programs such as bank loans. Women were therefore saving in order to be part of the group.

A group of 203 women, all of whom belonged to socioeconomically disadvantaged groups, were divided into four treatment groups and one control group (40 women each). Each received one of the following interventions:

Group A: (Control) No intervention.

Group B: Women received an alternative saving tool: a lock box and a key.

Group C: Women received financial literacy training.

Group D: Women were provided with a financial diary to track their expenses, but they were neither given any financial literacy training nor any alternative savings tool.

Group E: Women received financial training, a lock box and a key, as well as a financial diary.

The researchers hired women from the village to run the financial literacy training. It was important to the project design that instructors were women because gender dynamics played a significant role in the savings and literacy interventions. Teachers also needed to be good instructors and able to build rapport with the women. The researchers spent ten days training the instructors in facilitating the financial literacy modules.

In order to understand how savings behaviour changed over time as a result of the treatment, the researchers designed the study around five key visits with the women over a three-month period, with a two-week interval between each visit.

During the first visit, a baseline survey was created to collect data on important socioeconomic factors, such as savings strategies with informal and formal financial services, and the challenges the women experienced in their money management practices. Women were asked to provide a detailed account of savings sources and locations (including at home)

and state their total amount of savings at the time of the interview. SHGs were the most popular and important mode of saving, but many women also saved money at home.

The baseline survey was used to test relative differences between the control and treatment groups. Each respondent was assigned a literacy score based on on-the-spot reading and quantitative tests. Out of a maximum score of 120, 11% of women achieved the highest score of 80, while over 50% scored 0.

Women's financial status was also given a score based on variables such as access to formal financial services, and their ability to make household financial decisions was given a score. During the randomisation process, statistical tests were performed on the scores and baseline data to ensure that there was no meaningful difference between the control and treatment groups. On the second visit each of the randomly selected groups received their assigned treatments.

The third visit included a mid-line survey to collect data. The fourth visit involved focus group discussions with the women. Women receiving the financial education treatment were tested for understanding and retention of story content. Local language, locations, and situations in the modules illustrated realistic strategies for reducing spending on temptation goods and saving with SHGs and formal financial institutions.

For the final visit, after the intervention had been completed, the researchers collected data on women's savings. Women were also asked how their use of the savings tools impacted spousal and household relationships, in order to understand how the use of formal and alternative financial tools were affecting women's lives during the study.

Findings

The researchers found that women who were given the lock box with the key dramatically improved their savings. They also found that women who received the financial story-telling tools held improved attitudes towards savings.

Women with a higher literacy score were more likely to visit banks. Households that used formal financial channels showed more significant daily savings than households that relied on informal channels. While the savings tool led to increased savings, the financial training had a ripple effect because women often shared their new knowledge with their husbands and children.

Women experienced intra-household challenges to their savings practices during the time of the study. Over 60% of the women earned their own income, but often had little say over its use in the household. In general, husbands limited women's decision-making power over finances and women devised numerous strategies to hide and protect the money they saved.

During the time of the intervention, 50% of the women reported that husbands were not supportive of their participation in the study, and a small percentage reported domestic disputes. Of those who received the lock box, 19% hid it from their husbands.

Follow-up visits tested the impact of the financial literacy training for those women who received it. Additionally, survey and

interview methods were used to elicit responses on how the lock box and financial training influenced intra-household dynamics. Women's financial literacy skills were re-tested at the end of the intervention and compared with the results from the original baseline scores from the first visit.

Results showed that the intervention increased household dialogue about the budget and spending decisions. Women shared their new knowledge of financial concepts and management with family members and friends. Using a regression analysis, researchers also saw that for each additional unit of improvement in the financial literacy score there was an increase in savings (Rs.3 or USD \$0.05).

Perceptions about formal financial institutions were also measured at each visit. At the beginning of the study only 42% of the participants felt that banks were customer-centric, with 76% reporting this to be the case at the time of the fifth visit.

Women's bi-weekly savings after receiving the treatment were recorded at the third and fifth visits. Each savings channel was noted, from savings hidden at home or deposited in banks, to SHGs, to the savings in the lock box. Of the 94% of women who received the lock box, 83% used it to save during the time of the study.

Notably, women who received only the lock box saw a percentage increase in savings of 51%, with women receiving both the lock box and financial education experiencing a 42% increase. In contrast, the savings of the control group increased by only 1% and those receiving only financial education increased by 8%.

The study showed that financial education could have an impact on its own and change attitudes about formal financial institutions. Yet, as KC qualified:

“Financial literacy alone is not enough without good teachers. The financial literacy training worked because teachers were well trained and women could identify with them.”¹³⁶

Moreover, the provision of a simple and appropriate savings tool was essential to improving women's ability to save.

Applications

This study has important policy applications. RCTs are considered to be the gold standard of research for measuring impact and evaluating outcomes. With a relatively limited budget and project duration, the RCT design allowed the researchers to isolate the impact of a simple financial tool that was appropriate to the local context.

The research insights also suggested a sustainable interim alternative to formal banking. Because this savings mechanism is low cost and low maintenance, it can help bridge the gap between informal and formal financial service options.

Isolating the effect of a financial tool on financial behaviour can often prove difficult when many variables are at play in influencing people's adoption (or not) of a new product. Even more difficult to determine is how precisely financial literacy programs change knowledge and behaviour.

For instance, even after learning about more cost effective means for remitting money, studies have often shown minimal impact of this changed awareness on a remitter's choice of providers or use of services.¹³⁷

By building in different control groups for the financial education training, the study showed the impact of financial education relative to the introduction of a savings tool. As in similar, but larger-scale, studies,¹³⁸ the results show the importance of combining financial literacy initiatives with relevant savings or financial products to improve women's access and help close the gender gap.

The financial literacy tools used in the study are based on qualitative research with the study's participants. They are designed with the target audience's lives and experiences in mind, and can be further modified and adapted based on the interactive engagement between the researchers and the study population.

The use and development of these stories enabled ongoing dialogue throughout all of the phases of the research with participants. This approach not only improved savings, but also changed perceptions over the relatively short duration of the study.

Field experiments that creatively combine RCTs with qualitative, participatory methods over a longer time period, and with more resources, can help to sharpen the tools for understanding the impact of financial consumer products. But, as this study shows, even with time and resource constraints, careful study design can go a long way in showing impact and transforming circumstances on the ground.

Ethical Issues

The researchers noted that incorporating multiple visits into the study design was essential to building trust with the participants. This was important because participation in the study intervention sometimes introduced tensions into the women's households. Deepti Kc explained:

“Talking about money is always difficult. Why would I speak about my money with a stranger? With multiple visits, we were able to gain trust and women were more forthcoming about their money management practices and their savings.”¹³⁹

Multiple visits allowed the researchers to follow the women's well-being in the study, in addition to building a more holistic understanding of their situation. Potential limitations include the challenges of following up with women over the longer term due to time and resource constraints.

Recently there have been increased calls for evaluating the concrete benefits of research to study subjects when conducting big data and RCT studies.¹⁴⁰ Critics argue that the data collection process has become overly burdensome on participants who are treated not as participants, but as data sources to be mined for information while receiving little concrete benefit from the research.

Deepti Kc notes that research into people's finances and money, research participants requires them to reveal intimate details about their personal wealth and well-being. She says:

“We need to be extremely careful and considerate. That is one reason why we decided to make five visits, rather than follow the standard three: baseline, intervention, and endline.”¹⁴¹

Deepti Kc emphasised that the village women they trained to facilitate the financial literacy intervention were essential to the successful impact of the intervention: “Financial training alone cannot do wonders without efficient and well trained teachers.”

By developing financial literacy and savings tools interactively with teachers and study participants, the researchers treated women as collaborators in producing the context-specific modules. Financial education about tracking expenditures, reducing spending on temptation goods, and using banking services was a form of expertise sharing and ‘giving back’ that the researchers and village teachers, and in turn, study participants, shared with family and friends in the community.

More about the method

Experimental Economics: Rethinking the Rules by Nick Bardsley et al. (2010, Princeton University Press)

Laboratory Experiments in the Social Sciences edited by Murray Webster and Jane Sell (2007, Academic Press)

Evaluating Financial Products and Services in the US: A Toolkit for Running Randomized Controlled Trials (2015, Innovations for Poverty Action)

Field Experiments and Their Critics: Essays on the Uses and Abuses of Experimentation in the Social Sciences by Dawn Langan Teele (2014, Yale University Press)

Natural Experiments in the Social Sciences: A Design-Based Approach by Thad Dunning (2012, Cambridge University Press)

Running Randomized Evaluations: A Practical Guide by Rachel Glennerster and Kudzai Takavarasha (2013, Princeton University Press)



Figure 16



“In consumer finance research, ethical issues can be particularly difficult to navigate. For these (and many other) reasons, it is important to consider ethical issues at the outset of research design.”

RESEARCH ETHICS

Designing research that is sensitive to ethical issues can be tricky. In consumer finance research, ethical issues can be particularly difficult to navigate. Most people consider money to be a private matter, and sharing your personal financial information with other people can be both embarrassing and dangerous.

People may be ashamed to reveal the state of their finances to a stranger, or they may worry that their financial information will be leaked to neighbours, government officials, or companies. Millions of people depend upon accessing financial services such as credit and insurance, and the release of personal data can potentially affect their ability to access those services.

For these (and many other) reasons, it is important to consider ethical issues at the outset of research design. Academic institutions and US Federal regulations require human subjects review and clearance, as well as training of research staff in human subjects protection, before data collection can begin.

Ethical issues vary depending upon who will be included as research subjects in the study. Are these adults who can provide informed consent, or are they people who are considered to be 'at-risk populations' such as children or the elderly? Ethical considerations inform which methods are used, how they are applied, who applies them, and what the research will be used for.

Ethical guidelines and the review process vary depending on whether the research is done by a commercial, non-profit, government, or academic institution, since each of these bodies will carry out and apply research in different ways.

However, many considerations are common to all research. Procedures for informed consent, privacy, psychological comfort, data storage, and data sharing are just some of these common considerations.

Researchers also need to consider how they are affected by regulations. For example, the General Data Protection Regulation (GDPR) affects not only research carried out by researchers in the European Union; it applies to any research done with subjects who are resident in the EU, no matter where in the world the data is collected and analysed.

In this section we review the main ethical issues that affect consumer finance research and suggest ways to build ethical considerations into the research design. Every research project will generate a different set of ethical issues. Methods, topics, participants, researchers, and contexts all vary, so for every project we design we need to think through the risks and issues we may encounter.

Beginning with basic principles of consent, privacy, benefit, and equity is a good way to start. From there you can build up an ethical approach that is relevant to your unique research project. And, if in doubt, ask an ethics expert.

ETHICS IN FINANCE RESEARCH

The case studies presented later in this toolkit illustrate a wide range ethical issues that arise in consumer finance research. Here we give a few examples to provide you with a sense of how they can play out in practice.

Consent

In the Ethnography section of this Toolkit, our case study of Woldmarian F. Mesfin's research in an Ethiopian marketplace discusses the important issue of consent [see Case Study 1]. Mesfin's research shows how consent is about far more than reading a project description and signing a consent form.

Mesfin describes how his research participants were sometimes ashamed of how little money they had, and were uncomfortable talking with him about their financial habits. He took the time to get to know people so that they would not feel pressured to give him information, and instead could agree to participate when they felt comfortable.

Taylor and Horst had a similar experience in Haiti [see Case Study 2 in Object-Centred Methods]. They explain how they interviewed Haitians about the things they carried with them as they went about their everyday lives. This helped them to learn how financial practices occur in everyday life.

As well as asking participants to sign consent forms, they sought permission to film and photograph the interviews. Taylor and Horst provided a way for interviewees to choose different levels of consent. Participants had the option to choose not to be filmed at all, to just have their hands filmed as they interacted with the objects they were discussing, or to also have their faces recorded.

Data protection

Data protection is always a tricky issue. Jofish Kaye's study shows that data protection can't always wait until after data collection is finished [see Case Study 1 in Object-Centred Methods]. Kaye began the process of data anonymisation *during* interviews by excluding personal and unnecessary information. When interviewees showed them their financial spreadsheets on their computers, the researchers placed sticky notes over information such as names, account numbers, and bank balances before taking photographs. This saved them from a time-consuming and risky process of anonymising data later.

Data protection can be more complicated for some studies than for others. When projects involve a large number of researchers and participants, it is more difficult to ensure that data is adequately anonymised and protected. For example, financial diary studies carried out by several researchers can be more risky than a study carried out by just one person, because there are more ways that data can be accidentally leaked.

Privacy

Digital research can produce a variety of challenges around privacy. Tom Boellstorff reports that one big issue he encountered in his research on payments in Indonesia is that some researchers think that because something is online it is not 'real' and so you don't have to protect people's identities [see Case Study 2 in Digital Research].

Additionally, although online fora and social media are technically public, people post online as though the things they say are semi-private. Researchers need to respect this and anonymise people when they use or publish this kind of data.

Privacy protection was a major ethical issue in a study of Bitcoin carried out by Sarah Meiklejohn and colleagues [see Case Study 1 in Digital Research]. The researchers wanted to identify the extent to which Bitcoin lives up to its promise of pseudo-anonymity and to investigate how people's use of Bitcoin has changed over time.

To protect users' privacy, the researchers designed the study so that they would identify known service providers, but not individuals. By limiting their analysis to known service providers, and focusing on flows of Bitcoins rather than individuals' transactions, the researchers largely avoided issues of individual privacy and consent.

Benefits to participants

David Stoll's ethnographic research on debt in Guatemala highlights an ethical issue with respect to the benefits of the study for participants [see Case Study 2 in Ethnography]. Since most of his respondents were both poor and heavily in debt, he felt that it would be unfair if his research did not help them directly.

Stoll could not give his participants money, since it would both compromise the study and rapidly deplete his own resources. Instead, he tried to lend assistance by sharing his knowledge about community debt with organisations and policy-making bodies working on issues relevant to the community.

Experimental methods, especially RCTs, also raise important questions about how to balance the requirements for study design with the benefits to research participants. When control groups do not receive a particular service or product that is given to treatment groups, how can researchers address the principles of justice or fair treatment for all involved in a study?

As Deepti Kc and Mudita Tiwari's study of a village in Kenya demonstrates [see Case Study 3 in Experiments], a number of local women were given training to assist in the delivery of the intervention—financial literacy modules.

By incorporating capacity-building into their research design, the researchers helped the women to share their knowledge beyond the treatment groups once the study had been completed. This is one way in which experimental research can contribute to the community broadly.

RESEARCH WITH HUMAN SUBJECTS

Possibly the most influential ethical code in human subjects ethics is *The Belmont Report*, a United States Government guide that has become a reference for institutional review boards (IRBs) in the United States.

The move to develop codes for the protection of human subjects came about in response to inhumane biomedical experiments on human subjects during the Second World War and studies such as the Tuskegee syphilis experiment (1932-

1972), which was conducted without the knowledge or consent of research subjects. Ethical guidelines for protection have since been extended to include all forms of medical, behavioural and social scientific research.

The Belmont Report outlines three key principles in research with human subjects:

1. **Respect for persons:** Researchers must respect people's autonomy, treat them with courtesy, seek informed consent, be truthful, and conduct no deception.
2. **Beneficence:** The research should generate the maximum of social benefits possible, while minimizing harm to human subjects.
3. **Justice:** Researchers must ensure that research is carried out fairly and in a non-exploitative manner.

In practice, these principles can be met through ensuring participants' safety (physical and psychological), gaining informed consent from each participant, protecting subjects' privacy and confidentiality, undertaking risk management, and gaining approval from an authorised oversight body (such as an IRB).

The rules and procedures of local IRBs or other types of review boards will vary. Depending on the project, data to be collected, and level of risk to research participants, different types of review apply: exempt, expedited, or full review.¹⁴²

The project time line should therefore include sufficient time for the review process. Once a study has received IRB approval, there is an ongoing process of continuing review until the project is formally closed.

As a rule of thumb, the following kinds of materials are submitted to review boards for clearance before the research begins:

- **Timeline for research.** This should include time for review and research clearance.
- **Study purpose.** What is the purpose of the study? Who will be included in the study and why? What are research subjects being asked to do and why? What risks and benefits will accrue to study participants, as well as to other kinds of stakeholders?
- **Research instruments.** These may include questionnaires, interview guides, survey instruments, and other forms of data collection. Questionnaires and survey instruments should be planned carefully to think through the implications of what questions are asked and of whom, among other considerations. Research tools, such as questionnaires, can and should be adjusted in the field, where possible, when unexpected issues must be addressed or new developments arise.
- **Consent forms.** Consent forms should reflect research tools and study purpose. They should be written in clear language that participants are able to understand. These are typically short forms that outline the purpose and procedures for the study. Depending on the project, research participants will give signed or verbal consent. Forms should include the name and contact information of the principle investigator(s) and how they can be contacted when/if research subjects have questions or

concerns. Consent forms should always make clear that participation in the study is voluntary; research participants can choose to leave a study at any time.

- **Plan for data protection, storage, and use.** Who is responsible for data integrity and who will have access? How will identity and privacy be protected? What protection and level of anonymity can be guaranteed? What kinds of data will be kept, for how long, and how will the data be safely archived or destroyed, during the study and after the it ends?
- **Dissemination of research results.** Who will the research results be shared with? How and when will study results be shared with participants, research partners, and key stakeholders? Will they be given the opportunity to review and comment on the study's findings via follow-up visits, focus group discussions, or sharing study results prior to publication?

The best way to begin to learn about ethical practices for research with human subjects is to review some of the literature on the subject. Plenty of material is available online, such as the guidelines published on Forum: Qualitative Social Research. These can give you a general idea of the issues you may encounter.

RESEARCH WITHOUT HUMAN SUBJECTS

Research that does not involve human subjects directly can also be controversial when it comes to ethics. There is a lot of enthusiasm around the potential of 'big data' to create new knowledge that is beneficial to humanity. The rationale is that the benefits gained from creating new knowledge through data outweigh the risk of harming participants. This only holds, however, if individuals' privacy is protected through proper anonymisation and protection of data. It can also be challenging to manage data in ways that take individuals' privacy, protection, and consent into account.

Privacy issues are especially complex, since a great deal of data is collected without people's informed consent. For example, central banks and other financial institutions commonly use bank data to analyse socioeconomic trends, such as changes in the supply of credit or consumers' use of different payment mechanisms.¹⁴³ Credit card and mobile phone usage data collected by providers or financial institutions reach even deeper into the intimate realm of people's lives.

Moreover, data sets are often shared, especially with the current trend towards open access data. Sharing data promises significant social benefits, such as lowering the costs of data collection and increasing the size and quality of data sets. However, sharing data sets makes it impossible for consumers to give consent for all uses of their data, as required under the General Data Protection Regulation (GDPR) of the European Union.

"Informed consent" doesn't just mean that an individual has ticked a box or signed a consent form. Research participants should be aware of what the research involves and how it will be used. In other words, they need enough information to make an informed decision.

Paying individuals for their data can also give rise to thorny ethical issues, since this strategy tends to attract research participants who would not have agreed to be part of the study if they did not need the money.

Researchers and professional associations are responding to these kinds of issues by developing ethical codes and guidelines for digital research. For example, the Data Science Association has produced the Data Science Code of Professional Conduct to help researchers think through ethical issues.

Various specialised books now exist on the subject, such as *The Ethics of Big Data: Ethical Reasoning in Socio-Technical Informatics*. But the issues are complex and are likely to become more so in the future. While it is crucial that researchers planning digital studies are up-to-date on current ethical practices and standards, it is equally important that regulators act to protect consumer rights.

DISSEMINATION AND KNOWLEDGE-SHARING

One great way to show respect for research participants is to share your research study's preliminary findings and planned publications with them.

Researchers can include a phase at the end of a project to hold knowledge-sharing workshops or focus group discussions with key informants and clients to share study results. Researchers present their main arguments and conclusions and ask for feedback from informants who have the opportunity to share their opinions on the research findings.

As well as helping researchers to verify their study's findings with research participants, this is also a way of giving something back to participants and helping them feel that their contribution was valuable.

ETHICS SUPPORT FOR PROFESSIONALS

Even without an institutional affiliation, a number of options for training are available on research with human subjects and the responsible conduct of research. For example, the Collaborative Institutional Training Initiative (CITI) and the NIH Human Subjects Protection Training offer basic online training or tutorials.

Several independent non-academic IRBs offer training, assistance, and services for biomedical, educational, consulting and other types of research with human subjects. Professional marketing associations have also developed ethical codes of conduct for conducting marketing research with human subjects, from interview and survey research to the controversial 'mystery shopping'.

When it comes time to design your project, there are hundreds of books that you may find useful. Some of these are general, such as Mark Israel's book *Research Ethics and Integrity for Social Scientists*. Others are specialist, such as *Readings in Virtual Research Ethics: Issues and Controversies*, a collection edited by Elizabeth A. Buchanan.

Another great resource is the Ethnographic Praxis in Industry Community (EPIC), whose mission involves “providing practitioners, businesses, and partner organisations with access to practical ethnographic expertise from around the world.” EPIC offers a variety of resources on ethics as well as research design.

Of course, one of the best ways to get familiar with ethics is to learn from other researcher’s experiences. If in doubt about sensitive issues in research with human subjects, consult a specialist.

ETHICAL CODES AND REVIEW BOARDS

Ethical codes are developed to protect the autonomy, safety, privacy, and welfare of human subjects. Ethical issues arise regardless of whether researchers interact with human subjects directly (e.g., in interviews) or indirectly (e.g., statistical analysis of a database). The methods of data access differ, but the general principles remain the same.

Fortunately, these days there is plenty of advice available online on how to design ethical research, receive training in human subjects protection, and be aware of the institutional, legal, and regulatory requirements for research with human subjects.

Many researchers, especially within universities, can call on official bodies for practical guidance. In most countries, universities have their own review process that is carried out by a dedicated board, often called an Institutional Review Board (IRB) or an ethics committee. Each university will have a web page to tell you how these boards work. They are required to adhere to national legislation and protocols. In companies and NGOs, ethics oversight tends to be specific to the organisation.

More about ethics

Research Ethics and Integrity for Social Scientists: Beyond Regulatory Compliance by Mark Israel (2014, SAGE)

The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research (1978, The National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research)

‘Confidentiality and informed consent: Issues for consideration in the preservation of and provision of access to qualitative data archives’ by Louise Corti, Annette Day and Gill Backhouse (2000, *Forum: Qualitative Social Research* 1(3)).

CASRO Code of Standards and Ethics

MRA Code of Marketing Research Standards

Data Science Code of Professional Conduct, Data Science Association

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ABOUT CANELA CONSULTING

Canela Consulting is a research agency specialising in understanding ‘messy human behaviour’ in technology and finance. We draw upon the amazing diversity of knowledge created about people. From anthropology to economics, sociology to psychology, we take the best ideas and methods to create human-centred solutions. Canela offers end-to-end solutions in knowledge production and implementation. We design research to fit your organisation’s knowledge needs, manage your research programs, train your staff in knowledge management, and talk with your stakeholders. Our research philosophy is interdisciplinary and participatory.

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ABOUT THE IMTFI

The Institute for Money, Technology & Financial Inclusion (IMTFI), established in 2008 with funding from the Gates Foundation, is a research institute based in the School of Social Sciences at the University of California, Irvine. It has become a leading research center on the consumer side of financial technology—everything from mobile money to AI-driven alternative credit scoring. IMTFI focuses on the everyday use and implications of these new technologies: how people engage, refuse, modify, hack, share, and interact with them, and how they in turn influence people’s understandings of money, value, justice, even faith. In its initial phase, IMTFI’s core activity focused on supporting original research in the developing world and building a global network of researchers working on money’s technologies among the world’s poorest people, funding over 147 projects in 47 countries and connecting with over 187 scholars around the globe. Those researchers have produced 10 books and 100+ articles in scholarly and other venues, and have been mentioned in the media 170+ times, in venues ranging from Bloomberg Businessweek and the Guardian to Forbes, India. IMTFI is an established thought leader in this space and is well known in the academic, development, policy, and industry communities involved in emerging payments and their potential to change people’s financial lives. The institute is committed to creating a community of practice & inquiry into the everyday uses & meanings of money, as well as the technological infrastructures being developed as carriers of mainstream & alternative currencies worldwide. You can learn more at www.imtfi.uci.edu.

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