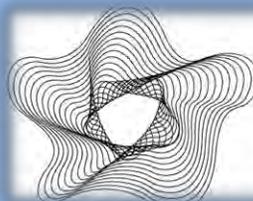


Consumer Finance Research Methods Toolkit

Erin B. Taylor and Gawain Lynch

For the Institute for Money, Technology & Financial Inclusion



IMTFI

INSTITUTE FOR MONEY, TECHNOLOGY
& FINANCIAL INCLUSION

The Consumer Finance Research Methods Project is a collaborative research project funded by the **Institute for Money, Technology, and Financial Inclusion** and by the **Canela Group**.

Erin B. Taylor and Gawain Lynch serve as project leads.

Information can be found on the IMTFI's website <http://www.imtfi.uci.edu/cfrmp>

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Consumer Finance Research Methods Toolkit (BETA version)

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Foreword by Bill Maurer

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About the Institute for Money, Technology & Financial Inclusion

The Institute for Money, Technology & Financial Inclusion (IMTFI), established in 2008 with funding from the Gates Foundation, is a research institute based out of the University of California, Irvine. Its core activity has been supporting original research in the developing world on the impact of mobile and digital financial services, undertaken by researchers from the global South. It has built an extensive transnational network of embedded scholars and researchers who focus on developing grounded, nuanced perspectives on people's everyday financial practices and the impact of new technologies. IMTFI has established itself as the 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. To date, IMTFI has supported 147 projects in 47 countries involving 186 different researchers. 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 has pioneered a complementary approach to researching digital financial inclusion: identifying talented researchers, telling compelling stories, translating local knowledge, and catching insights into the everyday lives of the poor that other research methods miss. You can learn more about their work at www.imtffi.uci.edu.

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Foreword

Why a Consumer Finance Research Methods Toolkit? And why now? There has been an unprecedented expansion of financial technology aimed at helping everyday people save, manage and transfer money. There are new insurance, investment and money management products, digital financial education tools and alternative credit scoring and lending services. What started with M-Pesa's mobile phone-based money transfer service in 2007 has blossomed into myriad new technologies and platforms for electronic payment and other digital financial services accessed via phone, computer, tablet, kiosk, ATM, point-of-sale terminal or other device.

We have dubbed this a “Cambrian explosion”: like the Cambrian period in evolutionary history, when on planet Earth biological organisms went through an incredible period of diversification occupying new environmental niches and experimenting with new body forms and types, financial technology is undergoing a period of profound change. Yet what all this means for everyday people remains very much an open question. In some places, we see consumers rapidly adopting a new service; in others, the same service simply does not find appeal. Investors and startups create new products but it is not always clear what problem they are trying to solve. And cash and coin—one of the most ancient of human technologies—endure, especially among the world's poor.

Since 2008, the Institute for Money, Technology and Financial Inclusion has been supporting research into the lives of the poor around the world as they are, or are not, impacted by new mobile and digital payment and financial technologies. With a global footprint and researchers from emerging markets sometimes working in remote regions, IMTFI has provided an archive of data on the intersection of money and technology, traditional and modern financial practices, and ground-level insights into how people really deal with their money and what they might do if they had access to a broader range of financial tools.

This how-to, hands-on guide spotlights the research methods our researchers and others have been using successfully to understand people's money worlds. It spotlights ethical and consumer protection issues and offers case studies and examples of successful research and dissemination to show how to turn insight into impact. From qualitative to quantitative, ethnographic to experimental, an expanded portfolio of research methods can grow the conversation on financial inclusion—to make it more broadly inclusive of diverse perspectives, peoples and paradigms.

This toolkit could not have been completed without the assistance of IMTFI's dedicated staff and in-house researchers, including IMTFI Administrator Jenny Fan, postdoctoral scholar Dr. Ursula Dalinghaus, analyst

John Seaman, and graduate research assistants Nima L. Yolmo and Nandita Badami.

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Figure 1 “Ediacaran/Mid Cambrian Diorama” Credit D. W. Miller

About the Toolkit

This toolkit has been produced as part of the IMTFI's [Consumer Finance Research Methods Project](#).¹ It demonstrates how different methods are being applied in consumer finance research, across both for-profit and not-for-profit sectors. It is designed to help researchers and managers to:

- Learn about innovations taking place in consumer finance research
- Broaden their knowledge of the strengths and limitations of different methods for understanding financial behaviour
- Facilitate connections between researchers and organizations who have 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 related to their own expertise, or discover entirely new methods and the professionals who develop them.

What is consumer finance?

We define consumer finance as money management practices by individuals and

/ or households using a range of financial tools (for example, money, bank accounts, cards, transfer services, mobile money, microfinance) to achieve financial goals (such as saving, lending, borrowing, investing).

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

Why a consumer finance toolkit?

Consumer finance research across all sectors faces common issues:

- Consumer finance products are changing fast globally, and our methods need to be adaptable to shifting consumer practices
- Due to the global connectivity of financial systems, providers and researchers are finding that collaborations are becoming increasingly helpful to understand consumers
- 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 and relevant data, while ensuring that the privacy of research participants is protected. We hope that the CFRM Toolkit will assist researchers in discovering new ways to tackle problems and forge fruitful collaborations.

What's in the CFRM Toolkit?

The CFRM Toolkit features six methods (qualitative and quantitative) used in consumer finance research. For each method, we describe what the method is, its strengths and limitations, and provide links to further information. We present two case studies for each method (the entry on *Experiments* showcases three) to show how each methodological approach can be used to understand aspects of consumer finance.

The case studies are drawn from research carried out in different sectors of consumer finance around the globe: academic, commercial, and non-profit research. The research we profile represents a wide range of practices, with data collected in labs, in the field, from data sets, and through experiments. The case studies show how each method can

be applied on its own, or combined with other methods, to find answers to some of the trickiest problems in consumer finance research.

Methods

- Time-tested methods, such as ethnography and experiments
- Innovative methods, such as object-centred interviews and digital research
- Methods developed specifically for money research, such as financial diaries

Case studies

- Showcase all sectors of consumer finance research: commercial, government, academic, non-profit
- Show how individual methods are applied to particular problems or can be combined with other methods

Resources

- Further reading on different methods
- Links to relevant institutions conducting innovative consumer finance work
- Links to useful data sources for consumer finance research

Who is this toolkit for?

The toolkit is intended for use by anyone who needs to understand how people use financial products and services:

- Managers
- Individual professionals
- Research and design teams

- Organizations and companies
- 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 of use I: Using the toolkit to choose the right methods

David is an anthropologist working in a research institute. For ten years he has been studying informal financial practices among residents of the south Pacific, primarily using a combination of surveys and third party data. Recently, the majority of his research participants have begun to use online banking and, in some cases, mobile money. He realises that he is going to have to adapt his methods in order to understand how these new changes are affecting financial practices.

David browses through this toolkit and decides to try a combination of interviews and digital research. Since he has some prior experience in these areas, he is able to continue to conduct most of the research by himself, occasionally calling upon other experts for advice.

Example of use II: Using the toolkit to choose the right experts

Monica 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. Looking through this toolkit, she decides that her organization needs to do a financial diary study along with some ethnography to get the information they need. Monica isn't an expert in these areas, so she contacts relevant professionals to form collaborations.

How to use the toolkit

There are multiple ways that you can use this toolkit:

- Read up on individual methods to learn the basics
- Get tips on how methods can be used in combination
- Browse the case studies to learn about innovations in consumer finance
- Explore the “examples of use” and “more about the method” sections to find methods guides, data sources, and potential collaborators

A Note on 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 releasing one's personal financial information 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. Importantly, academic institutions and US Federal regulations require human subjects review and clearance, as well as training of project personnel 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 do these include subjects 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, and across all sectors. Permission and procedures for informed consent, privacy, psychological comfort, data storage, and data sharing are just some of these common considerations.

In this section we review the main ethical issues that affect consumer finance research and suggest ways to begin addressing ethical considerations beginning with research design. To learn more about the ethical implications of a particular method, you can refer to the ethics discussions attached to each case study in this toolkit.

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 as to 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. These bodies are required to adhere to national legislation and protocols. In companies and NGOs, ethics oversight tends to be specific to the organization.

Research with human subjects

Probably the most influential ethical code in human subjects ethics is the [Belmont Report](#),² a United States Government guide that has become a reference for institutional review boards (IRBs) in the United States. Codes for the protection of human subjects became imperative after biomedical experiments on human subjects during the Second World War, and studies such as the Tuskegee syphilis experiment conducted without 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 meeting a number of general requirements: 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 authorized oversight body (such as an Institutional Review Board, IRB).

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](#)³ apply: exempt, expedited, or full review. The research timeline 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 prior to starting the research:

- Timeline for research. This should include time for review and research clearance.
- Study Purpose. What is the purpose of the study? A justification of 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. Instruments 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 it be safely archived or destroyed during and after the study ends?
- Dissemination of research. With whom will the research be shared? How and at what point will study results be shared with participants, research partners, and key stakeholders? Will they be given the opportunity to review and comment on study 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. A great deal of material is available online, such as the [guidelines published on Forum: Qualitative Social Research](#)⁴ or the [University of Sydney guidelines](#).⁵ These sources can give you a general idea of the issues you may encounter.

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, Collaborative Institutional Training Initiative ([CITI](#))⁶ and the [NIH Human Subjects Protection Training](#)⁷ offer basic online training or tutorials. A number of [independent](#)⁸ non-academic IRBs offer training, assistance and services for biomedical, educational, consulting and other types of research with human subjects. [Professional marketing associations](#)⁹ have also developed ethical codes of conduct for conducting marketing research with human subjects, from interview and survey research to the controversial “mystery shopping.”¹⁰

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](#).¹¹ Others are specialist, such as [Readings in Virtual Research Ethics: Issues and Controversies](#), a collection edited by Elizabeth A. Buchanan. Another great resource is [EPIC](#)¹² (Advancing the Value of Ethnography in Industry), whose mission is “providing practitioners, businesses, and partner organizations

with access to practical ethnographic expertise from around the world.” EPIC offers a variety of resources on ethics as well as research design.

In general, it is important to read up on related studies when developing a project to learn what has worked (or not) and about the kinds of unexpected methodological and ethical issues researchers have encountered on the ground. If in doubt about how best to proceed on more sensitive issues impacting research with human subjects, consult a specialist.

Research without human subjects

Research that does *not* involve human subjects directly can be controversial when it comes to ethics. The rise of “big data” has generated a great deal of excitement about its potential benefits to create new knowledge that is beneficial to humanity. However, while “big data” presents exciting opportunities to learn about human society and improve services, it poses heightened challenges to individuals’ privacy, protection, and consent.

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](#)¹³ or consumers’ use of different payment mechanisms.¹⁴ 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. Some worry that these data will be shared for proprietary gain. There are even discussions of paying individuals for their data which poses thorny ethical issues for consumer protection, and which directly impact consumer finance research. It is therefore all the more important for researchers to think through issues of user privacy and design their research accordingly.

"Informed consent" doesn't just mean that an individual has ticked a box or signed a consent form; they 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. But data analysis usually involves no such processes. 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 anonymization and protection of data.

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 specialized books now exist on the subject, such as [The Ethics of Big Data: Ethical Reasoning in Socio-Technical Informatics](#). However, 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

An important ethical dimension of respect for research participants is building in time and opportunities to share and disseminate preliminary findings and forthcoming publications.

Researchers can include a phase at the end of a project where they return to the field 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 [elicit feedback from informants](#)¹⁵ [See Appendix, blog post 3] who have the opportunity to weigh in on the appropriateness of study statements and whether and how they should be modified or expanded.

This is not only a means of following up or verifying study conclusions with research participants. It is also a way of giving back, if not materially, then at least in terms of acknowledging participants as co-contributors to advancing insights and impact in consumer finance research.

Ethical issues in consumer finance

The case studies in this toolkit illustrate a wide range of 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.

In the Ethnography section of this toolkit, our case study of Woldmarian F. Mesfin's research in an Ethiopian market place 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. He describes how his research participants were sometimes ashamed of how little money they had, and were therefore uncomfortable talking with him about their financial practices. Mesfin 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 Interviews*]. They explain how they interviewed Haitians about the objects they carrying with 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. 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. In other words, Taylor and Horst provided a way for interviewees to choose different *levels* of consent.

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. He 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 organizations and policy-making bodies working on issues relevant to the community.

Data protection is always an important issue. As Jofish Kaye's study shows, data protection can't always wait until after data collection is finished [see *Case Study 1* in *Object-Centred Interviews*]. Kaye began the process of data protection while interviews were taking place 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. This saved them from a time-consuming and risky process of anonymizing 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 anonymized and protected. For example, financial diary studies carried out by numerous researchers are likely to be more risky than a study carried out by just one person, because there are more ways that data can be accidentally leaked.

Digital research can produce a variety of challenges around *privacy*. Tom Boellstorff reports that one big issue he has 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*]. For example, data gained from a public forum may be technically traceable, but if it is reproduced without permission, researchers have a responsibility to generalize the data into findings that are not traceable.

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-anonymity¹⁶ 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.

Experimental methods, especially *randomized controlled trials* (RCTs), 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 demonstrates [see *Case Study 3 in Experiments*], a number of local women in the village were given training to assist in the delivery of the intervention – financial literacy modules. By incorporating capacity building into their research design, the researchers facilitated the ability of these 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 in matters such as strengthening financial literacy education in ways that can endure well beyond the life of the study.

As these examples demonstrate, 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.

Jane

"Lettuce was \$2.99 a head. I didn't want to buy it, but I did & when I got home I realized, 'Oh you already bought it.' Now I got a \$2.99 one on the table. As soon as you leave, it's going right back to the store."

	Due Date	Monthly Payment	Balance Owed	Account Balance	Acct Opened
AAA					
New AAA					
New AAA					
American Airlines	43	12/5/2017		5,451 Points	
	36	10/14/2013		2,951 Points	
				0 Points	
	46	5/17/2020		2,951 Points	
	47	8/8/2020		2,951 Points	
AAA Points		0		5,451	
AAA Business Services					
AAA Value Web Account					
AAA Value Web E-Mail					

Handles her family's finances, her adult child's, and her mother's

Distrust of fee-based financial advisors and non-professional peers

Self-created tools used for heterogeneous data storage

Daily account vigilance

Age	41-50
Married/Partnered	Married
Kids' Ages	14, 16, 27
Occupation	Office Administrator at NPO
Household Income	\$140,000
Education	AA or BA
Debt	Mortgage Car Loan
Assets	Home 401k Investments
Liquid Assets	\$500,000-\$1,000,000
Advisor	No
Trades yearly	<5

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Doug

"I play poker on the computer and I play the \$2 and \$4 games and I've got over \$300,000 in my account."



Turtle Investing

Conservative long-term investor – bonds in his 20's

Lives off the interest & reinvests extra

Set up separate trusts for kids and girlfriend

Designed manual cross-checking system to monitor extensive bond portfolio – 40 yrs ago

Age	69
Married/Partnered	Girlfriend
Kids' Ages	Adult
Occupation	Retired – Real Estate Agent
Household Income	\$101,000
Education	AA or BA
Debt	Mortgage
Assets	Home Investments
Liquid Assets	>\$1,000,000
Advisor	No
Trades yearly	5-15

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Figure 3 Summary pages for two participants, designed by Mary McQuiston. Image courtesy of Jofish Kaye

Money Methods



Figure 4 IMTFI Methods Workshop (2014)

Ethnography

Ethnography has a long history of use 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 creation 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](#), [mobile money](#), [Islamic banking](#), and [remittances](#).

Ethnography as a method is also changing. New data sources and analytical software are being applied to both classic anthropological problems (such as kinship) and new topics (such as mobile money). Technological developments have resulted in an entirely new field, known as [computational anthropology](#).¹⁷ Ethnography is also a core method in [human-centred design](#),¹⁸ an approach to research that incorporates interactions with people into the design of a product or service.

What is it?

- Qualitative
- Combines multiple 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 involves recording data using a variety of tools, including recording devices, writing field notes, analysing documents, or deploying questionnaires and surveys. One important method is participant observation, which involves learning about research participants' experiences by doing activities with them.

Technically, ethnography is more of an approach than a method because ethnographers often use multiple ways to collect data.¹⁹ However, all ethnographic studies have two features in common:

1. Research is carried out within real-life settings. 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.

Ethnographers' emphasis on living with people and observing their behaviour in real-life contexts distinguishes it from other qualitative methods, which tend to rely on either self-reporting or analysis of third-party data [for an exception, see *Experiments*].

In consumer finance, it is particularly useful for understanding how consumers adapt to changing products or economic conditions, and for how people's financial management is interconnected with their social relations.

Examples of use

- [Professor Lisa Servon](#) uses participant observation to investigate why and how customers use [payday loans](#) in a check-cashing store in New York City²⁰
- [Dr. Zsuzsanna Vargha](#) conducts ethnographic fieldwork at a Hungarian home savings and loan bank to understand [how banks explain financial plans to clients](#)²¹
- [Dr. Erin Taylor](#) examines how squatter settlement residents [build homes without loans](#) in the Dominican Republic²²
- The IMTFI's researchers investigate [mobile money use](#) around the globe²³
- [Professor Bill Maurer](#) documents ongoing efforts by [Islamic bankers](#) to remake money and finance²⁴
- Anthropologist [Bridget Kustin](#) uses participant observation to

investigate [how Islamic microfinance can alleviate poverty](#)²⁵

- Many sociologists and anthropologists use ethnography to study people's use of [microfinance](#)²⁶
- Several chapters using ethnography appear in the World Bank publication "Migration and Remittances during the Global Financial Crisis and Beyond"²⁷
- Tricia Wang shows the importance of ethnographic "[thick data](#)" as a complement to "big data" methods²⁸

Strengths

Research occurs in context

The places in which people live and work—home, office, school, social media, etc.—significantly affect their actions and choices. While financial products are often targeted at individuals and households, their family, friends, peers, and finance professionals in fact influence people's choices. Advertising, availability of technology, and financial regulation are also among the contextual factors that impact financial behaviours.

Ethnographers carry out research within these contexts, collecting data on how people interact with their social and physical environments.

Participation as a way of learning

A good way to learn about people's experiences is to join them in their activities. "Participant observation" is used by ethnographers to gain an insider's view into how people act, think, and feel. For example, standing in a bank line with a customer can be a powerful method to understand their frustration at having to wait and what can be done to make transactions more efficient. Using a product or program, such as online banking, helps show up design flaws that research participants might not think to mention when asked for feedback

Participant observation is particularly useful when trying to explain what motivates people to make choices that may not seem rational (such as using an expensive payday lender) or to understand the technical issues they struggle with (such as problems using online banking).

Cross-check data sources

Ethnographers collect observational data as well as verbal and written data, and they can cross-check these sources to identify instances in which what people *say* they do differs from what people *actually* do. This is useful for (at least) two reasons:

1. It helps identify errors and omissions in data. These may have been introduced into data, either because people do not tell the truth, do not accurately recall information, omit information that

they feel is unimportant or because there is a cultural taboo on discussing it. Sometimes people struggle to find the words to explain their physical behaviours (such as why they keep documents in certain places) [see *Case Study 2*].

2. Research participants' behaviour may contradict what they are saying, but this does not mean that the verbal data is simply incorrect and should be discarded. In all human societies there is a difference between what people feel they *should* do (ideal norms) and what they *actually* do (actual norms). Differences in observed and verbal data may not be due to error or omission, but rather to this variation. In fact, ethnographers pay special attention to such gaps because these help to identify cultural patterns in how people think, talk, and behave.

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 behaviour, such as seasonal harvests, rituals, 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 and pay bills at regular intervals

- Spending patterns cycle throughout the year due to changing seasons or religious festivals (e.g., many people spend more money at Christmas time)
- Yearly bonuses or seasonal harvests may mean that people earn most of their income is within a short time frame each year

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

Facilitate access to 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 always representative of a population at large

Ethnographers do not usually collect data based on representative samples. This means that, while their findings can count

as “evidence,” they not readily generalizable. The exception to this is comparative analysis, in which ranges of cases (often produced by different researchers and at different times) are compared to spot patterns and build social theory.

A lack of representativeness is unlikely to present a problem for researchers who are seeking information on changing social conditions or sentiments. However, sectors of consumer finance that depend upon representative samples to make important decisions, such as policy implementation or development programs, may need to supplement ethnographic data with quantitative data.

Usually not replicable

Ethnographic studies are rarely replicable. This is because:

- They involve the study of complex social phenomena that are prone to change rapidly
- Gaining access to the same sets of people that participated in an original research project can be difficult: they may have moved or no longer have time to participate in an in-depth study

Studies that require 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 a viable method will depend on what information is needed and the extent of resources available to conduct research. For example, if a bank wants to investigate customer experiences of waiting in line, then a few hours or days may well be sufficient 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: Transactions in Ethiopia: Direct observations of use of cash in sales

Direct observations can provide information about people's behaviour that is not accessible through any other method.

IMTFI researcher [Woldmariam Fikre Mesfin](#)²⁹ used participant observation to collect data on open-air cash transactions in fourteen different marketplaces in Ethiopia. Markets are busy places, and so buyers and sellers depend upon shortcuts 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 and (where appropriate and feasible) photography and video.

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 have 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

In order 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 according to their colour rather than by the numbers printed onto them, and calculate their value accordingly. This is, in fact, a common practice in many countries, especially in those that have brightly-coloured notes such as Ethiopia. However, these kinds of shortcuts 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 observe 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 sometimes 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."³⁰

While research participants could theoretically 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 their 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. [See Appendix, blog post 2]

Ethical issues

As with many studies of money, Mesfin told us that he encountered ethical issues regarding data access:

"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."³¹

However, since Mesfin spent a significant amount of time in each research site, he reports that he developed trust and even friendship with the sellers in the market. He also reported that if others saw him looking at the bags of others, they felt confident to open up and show him their bags.

Case Study 2: Debt in Guatemala: Using long-term ethnography to collect data

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

Moreover, ethnographers often revisit the same place for years or 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](#)³² 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!](#), Stoll describes how he watched Nebajenses become over-indebted as they speculated on

migration to the United States. He investigates 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 U.S. 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 United States. 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, livestock, or to improve their homes.

From 2006 onward, migrants found it increasingly difficult to find enough employment in the U.S. 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:

1. People were reluctant to believe that migration was no longer a successful strategy.
2. Even if they did recognize the risk, they considered it to be one worth taking.
3. 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.
4. The only way of paying back loans was to take out more loans.
5. Some people took loans to lend to others in the hope of making a profit.

Among lenders, Stoll found the following:

1. People would lend to each other to fulfil social obligations or with the hope of making a profit.
2. Loan sharks charged high rates to cover the cost of the risk.
3. 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 together the story.

Applications

Stoll's work has numerous applications in understanding and tackling over-indebtedness. Stoll reports that, while he was 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 made lending decisions
- Retail banks and other formal financial institutions could develop products that take into account 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 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 asking for my resources were on the order of \$1 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.”³³

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.”³⁴

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. However, there may be a gap between what researchers claim 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 research results in indirect assistance, participants may not associate it 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 the current ethical issues.

More about the method

[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)

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

[Handbook of Narrative Inquiry: Mapping a Methodology](#) edited by D. Jean Clandinin (2006, Sage)

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



Figure 5 Church Money Donations. Image courtesy of Woldmariam F. Mesfin



Figure 6 Ethiopian Currency. Image Courtesy of Woldmariam F. Mesfin

2 2019 Saturday

① Departed at 4:45 (local time)

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Figure 7 Sample document to record wedding gifts. Image courtesy of Woldmariam F. Mesfin



Figure 8 Market Scenes, W.F. Mesfin

Verbal Interviews

Verbal interviews are one of the most widely used methods in qualitative research due to their versatility and ease of execution. They are a standard part of research in both commercial and non-commercial research in consumer finance, such as in the payments sector and by regulators.

A variety of qualitative researchers are trained to conduct interviews, including sociologists, anthropologists, behavioural researchers, and user experience researchers. However, researchers who are more quantitatively focused, such as economists, may also conduct interviews.

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*.

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. It means that data is quite uniform, and interviewees’ responses can be more readily “coded” (categorized) and

analysed, giving them a quantitative aspect. For a comprehensive guide to structured interviews, see the [GAO Guide to Structured Interviews](#).³⁵

In *unstructured / semi-structured interviews*, interviewers adapt their questions as the interview progresses. This method is generally qualitative because there is variation between the questions asked of each interviewee.

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

Examples of use

- FAIR money undertook a [study of financial management](#) among struggling individuals in Silicon Valley³⁶
- In an older, but still relevant study, the Joseph Rowntree Foundation assesses the industry in their report on [moneylenders and their customers](#)³⁷
- A Bill & Melinda Gates Foundation / Gallup study of sub-Saharan Africans examined [payments and money transfer behaviour](#)³⁸
- IMTFI researcher [Janet M. Arnardo](#)’s researched how indigenous communities in the Philippines [store money informally](#)³⁹
- Jonathan Donner and Camilo Tellez examine the adoption, impact, and use of mobile financial services in their study of [mobile](#)

- [banking and economic development](#)⁴⁰
- A mixed methods approach investigates how [microfinance affects the development of rural women](#) in India⁴¹
- Bruce Cahan of the Filene Institute [interviewed representatives from credit unions](#) to better understand the potential of their roles and services⁴²

Strengths

First-person perspective

Topics related to money are always concerned to some extent with numbers, such as bank balances, prices, and interest rates. This means that researchers often need quantitative data, and fortunately also that it is often available. However, while statistics are often valuable in telling us *what* people do, they might not tell us *why* people make certain decisions. 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 with virtually anyone and in many different locations, such as at home, work, school, cafés, over the phone, or over the Internet. In consumer finance research, where the data being collected is often considered personal, choosing an appropriate

location can assist in helping interviewees feel comfortable.

Methodological 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 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.

In contrast, semi-structured interviews allow deviation from the interview schedule to allow for the discussion of interesting points that emerge while interviews are in process. Structured interviews, in which an interviewer sticks to the questions on the schedule, permit interviews to be directly compared, which is not the case for looser interviews.

How structured an interview is (or isn't) is just part of what makes them work. Props and context help data collection by prompting interviewees to speak on certain topics [see *Object-Centered Interviews*]. Another means of inquiry is [cultural domain analysis](#),⁴³ which involves asking interviewees to classify items in a

list, permits researchers to understand how interviewees order information

Quantifiable

Structured interviews that apply the same questions to each person in a sample group can work like surveys in providing quantitative data. Developing a coding schema for open-ended questions and analyzing the data using quantitative software can achieve this. While interviews are generally more time-intensive to complete than surveys, obtaining data from a representative sample is possible given enough respondents or a smaller group size.

Limitations

Self-reporting bias

Interviews generally depend upon the interviewee to give an accurate account of their own behaviours. However, while people are experts in their own opinions, studies show that we are unreliable at remembering facts. Interviews do not normally include substantial time for 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. Organizing interviews and carrying them out is a time-consuming process. In

commercial work, recruiters are often used to assist with the organization. Professional interviewers are needed to collect the data, which will then need to be transcribed, coded, and analysed.

Design complexity

Depending on the research requirements, writing effective interview questions can require 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 intended 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: Learning “good” and “bad” financial behaviours: Semi-structured interviews with Hispanic American college students

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.⁴⁴ Quantitative and qualitative data from various sources indicates that Hispanic Americans are one of the groups that are most at risk of financial difficulties. However, the data did not demonstrate 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.”⁴⁵

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 socialization among Hispanic Americans, the researcher interviewed 11 college students of 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 majors. Monetary incentives were given to interviewees to increase the rate of participation in the study.

Interviews lasted 60-70 minutes and were audiotaped. 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 do you believe that you should or should not have?

The interviewer then coded and compared the interviews to spot emergent themes. They showed a selection of their conclusions to the interviewees to attain their responses. 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. Specifically, interviewees reported that they had learnt the importance of financial management and saving from their fathers. Students also reported being 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. To a certain degree, students also learnt from their peers, television, or their religious communities.

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 socialization may not be a problem, but instead 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.”⁴⁶

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 is *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 populations that are difficult to access. However, 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 [University of Sydney guidelines](#).⁴⁷

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 at The Hastings Centre](#) describes the ethical issues involved in paying research subjects.⁴⁸

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](#).⁴⁹ Poorly designed research can sometimes inadvertently reinforce stereotypes, such as when questions are poorly thought through. This study, by keeping questions open, maximized the ability of students to share their own perspective and limit bias in the research design.

Case Study 2: Interviews for social network analysis: Mobile money in Kenya

An interesting application of interview techniques is in 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 whom, 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 whom, 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.⁵⁰ Mobile money was launched in Kenya in 2007 and is widely recognized 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, research 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 researchers 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 want to answer a few questions, and then saw 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 canvass 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 her new contacts.

In-depth interviews provided background and contextual information about people's experiences, feelings, social lives, and economic practices. Kusimba notes that the advantage of her in-depth interviews was that the quality of information she received were 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. They asked interviewees to tell them to whom they had sent money in the last year, and who had sent them money to draw the networks.

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 5-9 people. Where possible, the researchers then contacted the individuals that 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 chose to ask 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. First, people tended to be inaccurate in recalling quantities of money.

Second, many people did not like to talk about money directly. This was especially the case with men who would organize 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 help them to clearly see and analyse the connections in a way that is difficult or impossible with 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.”⁵¹

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 as 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 grown by leaps and bounds over the years. Kusimba notes that collaborations with experts in the method and in consumer science can introduce a range of models and approaches that social scientists might not be aware of. She says that it can also help to have a data scientist as a co-author, since this helps with the production of journal articles and also peer-review.

Findings

The team's combination of qualitative and quantitative analysis of social networks resulted in a wide array of discoveries. Many of the findings contradict common assumptions about how mobile money operates as a social and economic tool. Others illuminate how mobile money interacts in the context of 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 conceptualize mobile money as created 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. [see also appendix, blog post 5]

Mobile money helps to equalize 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, promoters of mobile money for development 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, contrary to the idea that mobile money changes the playing field, Kusimba states that, "For the majority, mobile money is a way of reaching out to

traditional economic support networks.” Moreover, 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 productive 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 monetized. 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 fundamentally altering the structure of social life.

The social network visualizations that the study generated provide a valuable complement to the in-depth interviews. They showed 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. Moreover, they are reciprocal networks, with money moving backwards and forwards rather than in one direction. These findings contribute to conversations about families, informal finance, social relationships, and ideas of reciprocity.

Applications

The combination of 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 would be fascinating and may uncover contrasting cultural dynamics around money sending. This approach is likely to be of interest to policy makers, especially since it emphasizes the importance of groups in mobile money usage.

Ethical issues

Privacy is always an issue with 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 size and frequency of remittances. There were people in the study who sent remittances secretly and did not want them to be a part of the network visualisations. While such problems are anticipated, they mean that interview data on networks is subject to some uncertainty and also entails privacy concerns.

In general, says Kusimba, East Africans are quite open with information, but some of their mobile money use can be illicit. They 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.

More about the method

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

[Inside Interviewing: New Lenses, New Concerns](#) by Jaber F. Gubrium and James Holstein (2003, SAGE)

[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)

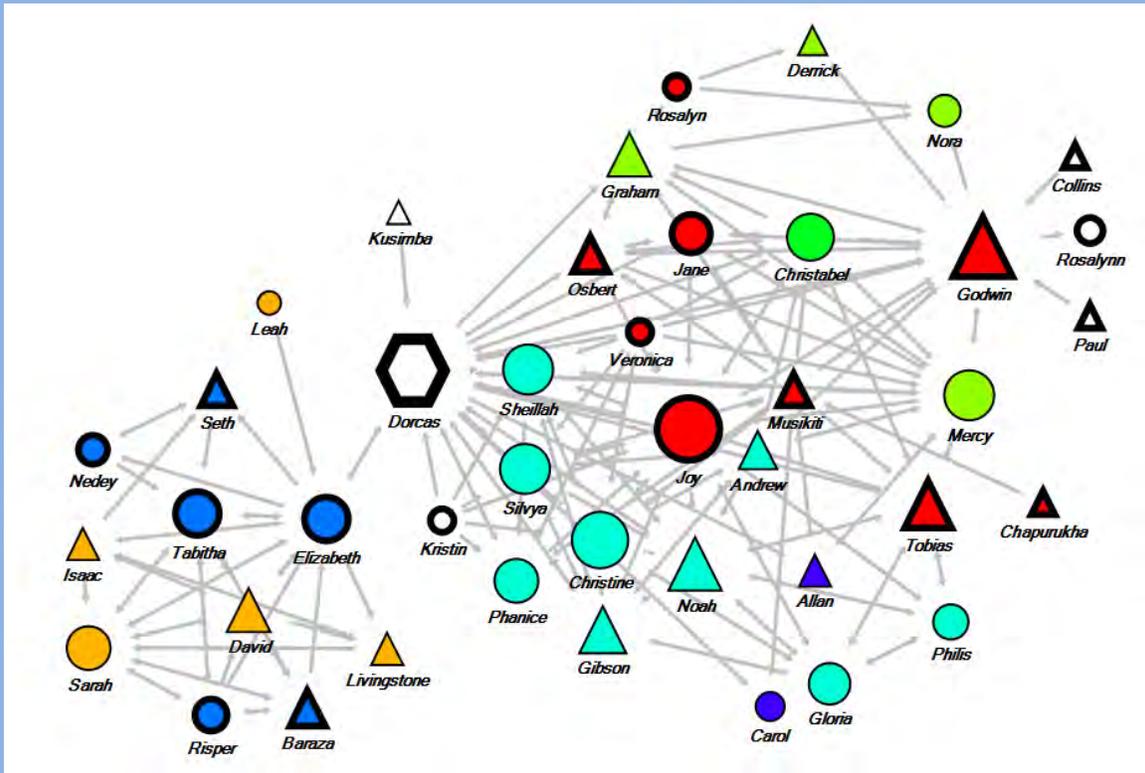


Figure 9 Dorcas (Broker) Social Network Analysis. Image Courtesy of Sibel Kusimba

Object-Centred Interviews

Researching objects used in consumer finance practices is growing in popularity, particularly in commercial research that informs product design and marketing. User experience researchers, designers, and ethnographers carrying out consumer research are leading the development of this method.

While object-centred interviews are commonly used in product development and marketing, the general principles have been applied to many kinds of consumer research problems. As the following case studies show, object-centred interviews have been used in research that focuses on how objects (money, credit cards, wallets, etc.) prompt specific behaviours, including decision-making, household financial planning, and financial consequences.

What is it?

- Qualitative
- Combines interviews with props
- Face-to-face or remote data collection

In object-centred interviews, props are incorporated into a verbal interview with the goal of prompting conversation around particular topics. The interviewer may introduce objects, such as a product prototype or flash cards, or objects may belong to the interviewee, such as the

contents of the interviewee's wallet or the devices they use for banking.

Objects may be *static* or *interactive*. *Static* objects are things that interviewees are asked to comment on, but not interact with. Questions may focus on an object's use, design, appeal, or functionality. Flash cards, photographs, video, money, credit cards, and even sound can all be used as static objects in interviews.

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 that may not emerge during a verbal interview.

Examples of use

- IMTFI researcher José Ossandón showed how people use credit card invoices to track funds by way of "[accounting in the margin](#)"⁵² [see also appendix, blog post 4]
- An anthropologist used a "[pile sort](#)" [technique](#) to classify expenses in household budgets in Mexico⁵³
- CGAP's [human-centred design](#) included a simulated income and expense activity⁵⁴
- [In his book, Dr. Joe Deville](#) shows how credit card statements and debt collections letters prompt customers to make payments⁵⁵
- IMTFI researcher Charmaine 'Ilaiu Talei [studied hand-woven mats alongside mobile money in Tonga](#)

to understand how the two are commercially connected⁵⁶[see appendix, blog post 3]

Strengths

Assist in generating discussion

People are often not accustomed to talking in detail about their use of financial tools and services. Props can help the interview to open up, and to stay on topic by providing a point of focus and by encouraging people who may feel shy or uncertain. For example, interviewees may find it easier to show the interviewer the contents of their wallet, pointing out various objects that relate to money practices, 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.

Clarify 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 of 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 demonstrate 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 memorized 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 therefore helps to counter a range of limitations that may be present in verbal interviews.

Produce user-created data

Some use of props involves asking 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. Maps and other diagrams drawn by the interviewee can be saved for later analysis, either by photographing them or keeping the physical object [see *Case Study 1*]

Limitations

Self-reporting bias

Like ordinary verbal interviews, object-based interviews can involve self-reporting bias. However, incorporating observational techniques can sometimes mitigate these.

Resource-intensive

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

Case Study 1: Combining multiple 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 US\$18,000 - US\$150,000 per year.⁵⁷ They 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 summarize 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 devised 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, and colleagues. This meant that the interviews became the testing ground for the method.

The team interviewed 15 people, endeavouring to recruit a range of people with different incomes, employment situations, and demographic factors. To begin, they [sent an email](#)⁵⁸ to people who had previously volunteered in their studies and asked them to fill out a short survey. Participants were selected from this group.

Each interview was attended by at least two researchers, and they took place in the interviewees' homes. 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](#)⁵⁹ for more details).

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 emphasized 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](#)⁶⁰ 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.”⁶¹

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.”⁶²

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 anonymized 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 money-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 socialization), 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 anonymized if necessary. To analyze the data, multiple reviewers tagged themes in the transcripts. In order to aggregate the themes, they wrote them up onto post-it notes, accompanied by sketches and photographs. They then sorted and summarized 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—a location that is certainly not suitable for object-based interviews. 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.”⁶³

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.”⁶⁴

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 \$1.25 on a cup of coffee, but she is considering spending \$3,000 to give her \$5,000 1985 Nissan 300ZX a new paint job. 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.”⁶⁵

Another interviewee, Doug, used a system of index cards to cross-check the interest he was earning on his \$1.2 million 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 keeps 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 woman 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.”⁶⁶

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 capitalize 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 interviews. In this study, the researchers decided to anonymize 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 anonymized 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 anonymize photographs later. Moreover, 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: “Portable kit” studies on poverty and personal finances 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 socialize 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.

[Dr. Erin B. Taylor](#) and [Professor Heather A. Horst](#) undertook a study of mobility and

finances among poor Haitians living on the border of Haiti and the Dominican Republic between 2010 and 2012.⁶⁷ 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, socialize, 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 (US\$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 less 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 conducted, they started the portable kit interview with a set of background questions.

To begin the object-centred interview, 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 the researchers 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 summarized, particularly noting visual aspects such as the condition of money, branding on cards, mobile phone personalization, 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 US\$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 their 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”). She 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, he had invested in a fake Dominican ID card. Emmanuel reported that because he lived on the Dominican side of the border and lived with a Dominican-Haitian, 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 about 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 interviewees give interviewers 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 in the first case study, 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 interviews 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 marginalized people, such as security concerns or the need use fake identification. Object-centred interviews 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 interviews have clear applications in policy work, socioeconomic development, and commerce. Making good policy requires good information, and object-centred interviews 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, the fact that this research focused on poor and marginalized people raises further issues.

One research problem 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 US\$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

[Using participatory visual methods](#)
(Morgan Centre)

[Participant produce video toolkit](#) (Morgan Centre)

[Participant mapping: An innovative sociological method](#) (Morgan Centre)

[Situating Everyday Life: Practices and Places](#) by Sarah Pink (2012, SAGE)

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



Figure 10 Common items in a portable kit. Image courtesy of Erin B Taylor and Heather A Horst



Bag Contents - This interviewee carries Dominican pesos and his phone with a mobile money account. He does not have a bank account. He sometimes uses Western Union when clients send him money to do odd jobs such as paying their bills or doing their shopping.

Photo by Erin B. Taylor

Figure 11 Object Centred Interview, Haiti (Erin Taylor)



Figure 12 Financial event cards. Image by Jofish Kaye



Figure 13 Financial event cards. Image by Jofish Kaye



Figure 14 Financial event cards. Image by Jofish Kaye

Financial Diaries

What we currently recognize as the financial diary methodology 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](#), 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.”⁶⁸

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](#)), and has proved useful for commercial projects as much as ones with non-profit goals (see the case studies in this section).

Depending on a research project's goals and resources, the financial diary method is adaptable and can be used to collect any 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 diaries are a method of collecting data on financial behaviours by using a “diary” to record transactions. Financial diaries are not technically 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 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 apply the diary 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 laptop database. They can be implemented in person or using online programs.

Depending on a research project's goals and resources, the financial diary method is adaptable and can be used to collect any range of data, from small, exploratory studies to large, statistically representative ones.

Examples of use

- The [US Financial Diaries](#) 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 basis⁶⁹
- [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 program⁷⁰
- The [Southern Africa Labour and Development Research Unit](#) (SALDRU) has information on Daryl Collins's study using financial diaries as a learning tool for a specific MFI (SEF), targeting their clients⁷¹
- CGAP's [Smallholder Households Financial Diaries Project](#), also implemented through Bankable Frontier Associates, is examining how smallholder households combine agricultural and non-agricultural sources of income and employ a range of financial tools in three countries (Pakistan, Tanzania, and Mozambique)⁷²
- FSD Kenya 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 Kenyans⁷³
- 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 Bengal⁷⁴
- [Freedom from Hunger](#) used financial diaries in Mali and Ecuador to better understand young people living in poverty⁷⁵
 - A Bankable Frontier Associates and The MetLife Foundation-led [Mexican financial diaries project](#) in Mexico City and Oaxaca offers crucial insights into the ways that families are juggling borrowing and instalment credit to bridge gaps in volatile income patterns.⁷⁶

Strengths

Shows 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 insight can potentially lead to new policies and interventions.⁷⁷

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 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 ways of categorizing savings vs. investments, for example.

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.

As is the case with ethnographic and any other research methods, it is important to keep in mind that respondents act differently when being observed. They don't always tell researchers what they want to hear and they may work to keep up appearances to meet standards of politeness or respectability.

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.⁷⁸

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, 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. 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 require an enormous amount of researchers 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. 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.

Many financial diaries studies do not aim to be representative. Instead (like ethnography) they provide fine-grained detail, qualitatively and quantitatively, about people's financial lives – not only what people "earn or spend, but in what frequencies, amounts, and modes."⁷⁹ This can help to generate new questions and hypotheses that can be tested with complementary RCTs, for example, to show a specific cause and effect

relationship or capture an effect at a more representative scale.⁸⁰

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.⁸¹ 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, when researchers fill out the diaries themselves,

they are dependent upon participants being at home or available, and this is not always achievable. When participants self-report, they may be better placed to fill out their diaries on time; alternatively, they may forget or have other core activities that take precedence over their research participation.

According to Julie Zollmann, data accuracy is not particularly affected by minor deviations in timing. However, timing issues can strain the research project's resources, since costs increase when researchers have to spend time searching for respondents.

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.

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”⁸² because they wanted to better understand the diversity of financial tools and money management strategies of the poor in “granular detail” generally missing from studies of the poor at that time. Most studies depicted poor people

as having few financial tools available and gave the impression that the poor lived purely hand-to-mouth.⁸³

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 that 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.’”⁸⁴

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 in each country, 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.

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. They report that an additional bonus was that it also gave participants a sense of ownership of study. 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.

Each study began with an initial two interviews that allowed researchers to get to know a household. 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.

In order to increase the accuracy of self-reporting, after every visit the researchers calculated the “margin of error” in responses by comparing incoming and outgoing expenditures. On the next visit, the interviewer would ask further questions to try to find out where the difference had arisen. 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 finished, 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 these studies remarkable is that they demonstrate clearly how poor people cope with unpredictability by using a wide range of financial tools. They use 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 Appendix 1 of *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 used to keep 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.”⁸⁵

In many respects, individual's stories have generated more ground-breaking revelations than have the project's quantitative outputs. Individual cases 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 organizations 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 organizations working with poor households.

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,⁸⁶ Julie Zollmann points out that many poor people prioritize 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, in Kenya, M-Shwari is so popular despite its short loan period (30 days) and high fees (7.5%).

In [another post](#),⁸⁷ 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 away 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 for households that give money away regularly, 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 contribute to disadvantage or can help overcome it [see *Case Study 1 in Verbal Interviews*]

According to Zollmann,⁸⁸ 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. They 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, care must be taken to store data 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. According to Julie Zollmann, 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].”⁸⁹

For more information on protecting participants' identities, see the [guidelines published on Forum: Qualitative Social Research](#)⁹⁰ or Mark Israel's book [Research Ethics and Integrity for Social Scientists](#).⁹¹

Case Study 2: Online financial diaries: A short-term commercial project

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

[Alexandra Mack](#), a Research Fellow at Pitney Bowes, conducted financial diaries as part of a study of financial communications management in the United States.⁹² Mack was interested in how “financial communications” impacted financial management within a household. She had already used other methods, including interviews and scrapbooking, to collect data on financial behaviour. 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, if they successfully completed the study, they would receive a one-off payment of \$150. All participants were over 21 years of age, had household incomes over \$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 and how to get in contact, 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 in the course of their everyday lives.

Mack observes that methods to prompt participants may change depending upon the characteristics of the demographic taking place in the study. In some cases, such as where people have mobile lives and occupations, text message reminders might work better. The key point is to remember you are asking them to go to something “new” for the period of the study.

The first question in the diary study asked the participant to talk about them. 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.”⁹³

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 posed a disadvantage, in that by not being physically present in their space it was not possible to observe their behaviours. This made it difficult to know what other possible questions should be asked.

Findings

Mack found the method to be suitable to draw 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 dialog 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.”⁹⁴

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

The [Portfolios of the Poor](#) and [US financial diaries](#) websites have extensive information 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)

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)

FSD Kenya provide [data sets](#) from their financial diary study in 2012-2013

CGAP has also released [a report and data sets in February 2016](#) for their year-

long Smallholder financial diaries project
in Mozambique, Tanzania and Pakistan⁹⁵



*Figure 15 Bills on microwave—put there until you have to deal with them
(Photo by Alexandra Mack)*



Figure 16 Donation receipts for taxes (Photo by Alexandra Mack)

Digital Research

From paying with cheques to trading stocks, digital technology has transformed how consumers and professionals do their banking. As David L Stearns describes in his book, [Electronic Value Transfer: Origins of the VISA Electronic Payment System](#) (2011, Springer), 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. Wire services provided the foundation for the interbank associations that became the Visa and MasterCard networks later on.

In the early 1960s, the banking industry was one of the largest users of paper, struggling under the weight of deposit slips and cheques.⁹⁶ Coding cheques magnetically was an early move to use technology to reduce both paper usage and processing time.

Over the next few decades, as the cost of computing technology waned, these early technological developments were followed by the automation of other processes using On-Line Real Time (OLRT) computing.⁹⁷ These included the use of computers at the point of sale to process transactions, and in the back end to keep records.

However, digital finance did not take off in a large way until the World Wide Web became accessible in the early 1990s. Instead, ATMs were joined by an increasing array of credit, debit, and store

cards. Charge cards have existed since the late 1800s, but they did not become widespread until after EFTPOS (Electronic Funds Transfer at Point of Sale) was launched in 1981.

Today, this field is huge, and growing. It encompasses everything from how people use gift cards to how they purchase items in online games. It is made even more huge by the vast quantities of data now available about people's transactional histories, although many of those data sets are proprietary and often off limits to 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 and recipient's jurisdictions. Researchers wishing to access a particular data set should contact the institution that owns it and request a DUA.

As digital consumer finance products and data have proliferated, the range of research topics and the tools we use to investigate them have also expanded. Service providers, such as banks and payments companies, have historically been geared towards identifying customer needs and preferences in order to develop

better products and better delivery mechanisms.

In terms of methods, service providers have been particularly instrumental in developing survey techniques and ways to test user preferences. 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.⁹⁸ With respect to consumer welfare, psychologists and sociologists have investigated the impact of digital money on people's spending habits, especially focusing on whether it increases indebtedness.⁹⁹ 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.¹⁰⁰

Non-profit organizations have tended to be more focused on how digital consumer finance can increase the "financial inclusion" 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.¹⁰¹

Field experiments have been used extensively as a way of testing program effectiveness [see *Experiments*]. However, commentators have pointed out that [unequal access to technologies](#)¹⁰² (the "digital divide") means that some groups are unable to benefit from digital services, and may even [face greater](#)

[risks](#)¹⁰³ using digital services than transacting in cash.

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. They cover a broad range of topics, including 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.

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 in digital research.

However, digital research deserves specific attention because it changes the ways in which we can carry out these classic methods, by providing new tools and avenues for communication with

research participants and data. Moreover, consumers are using an increasingly wide array of digital payments services, and these are an important topic of study. They 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
- Studies carried out *in person* may include moderating a focus group about mobile money use, conducting participant observation of people using online banking, or interviewing a person about their use of a financial literacy application on a mobile phone
- Some studies incorporate *both modes*, incorporating data collected online and offline, including users' interactions with researchers online and in person, and data collected by service providers subject to data use agreements, confidentiality, and ethical considerations

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.”¹⁰⁴

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.

Examples of use

- Chapter 7 in the [Handbook of Consumer Finance Research](#) discusses laggards in e-banking uptake¹⁰⁵
- A research paper called [Zap It to Me: The Short-Term Impacts of a Mobile Cash Transfer Program](#) reports on the first randomized evaluation of a cash transfer program delivered via the mobile phone¹⁰⁶
- A World Bank working paper, [South-South Migration and Remittances](#), uses World Bank

- data sets to analyse and estimate remittance flows¹⁰⁷
- ING supplements their [Europe-wide surveys](#) with ongoing polling on single questions through their computer portal, [eZonomics](#)¹⁰⁸
 - Researchers examined the extent to which anonymized data from mobile phone networks can be used to [predict the poverty and wealth of individual subscribers](#) in Rwanda¹⁰⁹
 - The Institute of Network Cultures' [Money Lab Reader](#) includes various studies of “alternative currencies” such as Bitcoin¹¹⁰
 - A European Parliament report, [Consumer Behaviour in a Digital Environment](#), investigates how consumers benefit from the digital environment and whether and how they change their purchasing behaviour¹¹¹
 - Researchers from the National Bureau of Economic Research studied [how “digital assistants” can be used to remind people to save money](#)¹¹²
 - CGI's report [Understanding Financial Consumers in the Digital Era](#) presents findings from their survey of consumers in the U.S., Canada, France, Germany, Sweden, and the U.K.¹¹³

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 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 that were deliberately developed to collect data (such as [Revelation](#), a program that participants use to share information with researchers¹¹⁴), 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.

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, as 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.¹¹⁵ However, Bitcoin's novelty and technical complexity means that researching it requires both creativity

and expert knowledge of computational mathematics.¹¹⁶

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.¹¹⁷ The researchers were interested in identifying the extent to which Bitcoin lives up to its promise of pseudo-anonymity¹¹⁸ and to investigate how people's use of Bitcoin has changed over time.

The researchers state explicitly that they did not aim to identify individual users. Rather, they used a combination of participation (using Bitcoin themselves) and algorithmic analysis of transactions 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 their pseudo-anonymity.

Method

In contrast to most payment systems, Bitcoin's users are pseudo-anonymous, but flows of value around the network are publicly visible. When a user makes a transaction, they use a [public key](#)¹¹⁹ that encodes their identity so that it is not passed on to anyone else in the chain. However, the Bitcoin [block chain](#)¹²⁰ encodes all *transactions*, past and present, and it is this feature that makes value flows publicly visible.

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 are 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 organizations 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.”¹²¹

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.”¹²²

After this collection phase, the researchers analysed the data using

[account clustering heuristics](#).¹²³ 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-anonymized.

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.”¹²⁴

While they did not identify real-world accounts directly, their analysis de-anonymized users to a significant degree. In particular, the researchers analysed certain highly publicized 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.”¹²⁵

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.”¹²⁶

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 to take digital currency use into account.

In some countries, there is currently a tentative move towards incorporating Bitcoin into mainstream payments services, such as through contracting vendors to accept Bitcoin payments or [installing Bitcoin ATMs](#).¹²⁷ 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 researchers’ 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).”¹²⁸

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.

In many cases, however, judgements as to when social benefit outweighs issues of consent are subjective and problematic. 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 anonymized 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 upon the credit history of their entire social network.¹²⁹ 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 fears may be unrealistic, 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](#).¹³⁰

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](#).¹³¹

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](#)¹³² has produced the [Data Science Code of Professional Conduct](#)¹³³ to help researchers think through ethical issues.

Various specialized books now exist on the subject, such as [The Ethics of Big Data: Ethical Reasoning in Socio-Technical Informatics](#)¹³⁴. However, 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

The American anthropologist Tom Boellstorff and his team carried out [a study in 2012-13](#) 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 in Indonesia.¹³⁵

The researchers chose this focus because device ownership, Internet access, and

their use for online shopping have grown rapidly in Indonesia over the past two decades. While many Indonesians continue to be left out of the digital revolution, the gap is fading fast and those who are connected often have multiple devices.

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 (ICD) showed that the value of internet-based trade in Indonesia reached \$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 that 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 synthesized 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.”¹³⁶

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, and all of their respondents had a BlackBerry and often other kinds of smartphones as well. One interviewee had 5 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. The researchers 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.”¹³⁷

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 shipping because items would be hand-delivered. Their buying practices therefore often mimicked physical shopping.

Facebook was often the first pathway to online shopping because respondents would see sponsored advertisements, information posted by friends on their own timelines, 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 (\$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 his own, 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 6 respondents used Internet banking services to make a payment, and only 5 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 5 respondents used BNI.

Why use an ATM rather than making 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 in 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.

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 placed in 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.¹³⁸ 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 generalize 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 anonymization 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

[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)

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

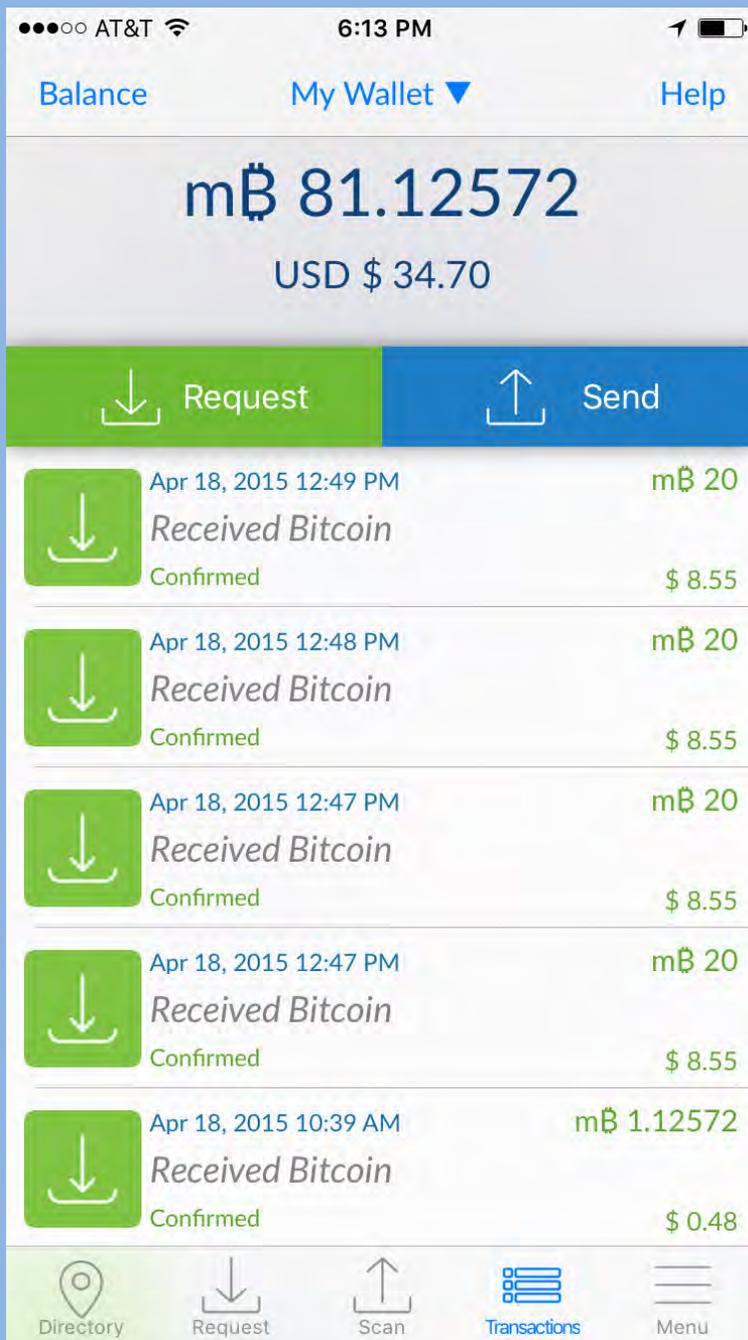
[Readings in Virtual Research Ethics: Issues and Controversies](#) edited by Elizabeth A. Buchanan (2004, IGI Global)

[How Would You Like to Pay? How Technology is Changing the Future of](#)

[Money](#) by Bill Maurer (2015, Duke University Press)



Figure 17 Bitcoin ATM, Irvine (Photo by Ursula Dalinghaus)



*Figure 18 Screenshot of Bitcoin Wallet
(Photo by Ursula Dalinghaus)*



Images from a shopping mall in Surabaya: BlackBerry predominating and associated with cutting-edge devices. The rupiah exchanges for approximately 1 US\$ = 9,500 Indonesian rupiah. Photos by Tom Boellstorff.

Figure 19 Photo by Tom Boellstorff

Semantic field for "gadgets" in contemporary Indonesia

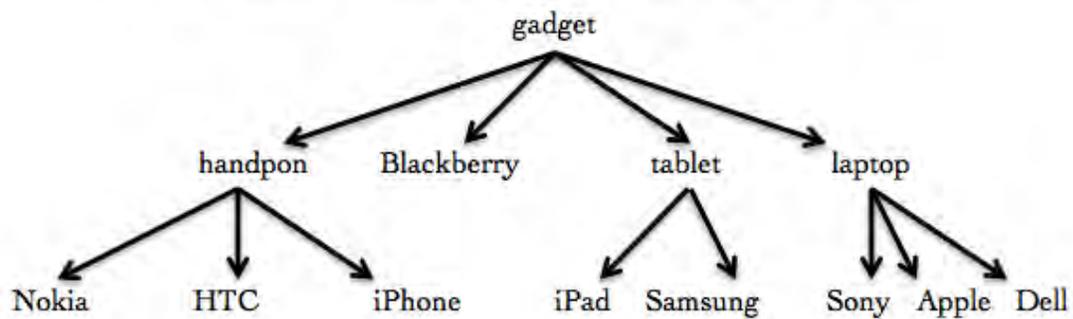


Figure 20 Photo by Tom Boellstorff

Experiments

The use of experiments in consumer finance research grows out of behavioural psychology and experimental economics.¹³⁹ Consumer finance experiments reflect the concerns of both those 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 Randomized Control 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 hypothesis 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. Field-based experiments (RCTs) follow criteria for randomization of the study population and testing of specific variables to measure impact of a product or intervention. Field experiments 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, but they can provide a more realistic picture of behaviour than lab experiments.

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 is therefore not always limited to recruiting participants whom the researcher might need to pay to travel to the lab.

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 "[randomized controlled trial](#)" (RCT).¹⁴⁰ RCTs are [considered to be the "gold standard"](#)¹⁴¹ of [hypothesis and impact testing](#).¹⁴² Derived from biomedical and epidemiological clinical trial methods, RCT's evaluate and measure impact by comparing the effect of an intervention in a treatment or target group(s) against a control group that does not receive the intervention.

They 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.¹⁴³ 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 randomization of the study population to be studied is crucial to the design and is "the core RCT methodology."¹⁴⁴ 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 randomization, applying a variety of statistical techniques to control for differences, but these often involve making assumptions that are more difficult to test than if randomization is used in advance.¹⁴⁵ 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.¹⁴⁶ A simplified explanation of the basic setup is as follows.¹⁴⁷ 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.¹⁴⁸ 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](#).¹⁴⁹ 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.¹⁵⁰ 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, they were able to infer which loan structure worked the best. [see also appendix, blog post 7]

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 \(ELSE\)](#)¹⁵¹
- IMTFI fellows Deepti Kc and Mudita Tiwari carried out [an experiment](#) to test ways to improve the financial capability of women in India¹⁵² (see Case study 3 below)
- Johannes Haushofer and Jeremy Shapiro used a [randomized controlled trial](#) to measure the response of poor rural households in rural Kenya to large temporary income changes in the form of unconditional cash grants.¹⁵³

- 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 women¹⁵⁴
- A [natural experiment](#) carried out in India investigates the optimal structure of a microfinance loan¹⁵⁵
- Economists undertook a [natural experiment in Singapore](#) using a panel dataset of consumer financial transactions to study how consumers responded to an unanticipated income shock¹⁵⁶
- A [field experimental in Malawi](#), conducted by Xavier Giné and Dean Yang, tests whether the provision of insurance induces farmers to take out loans¹⁵⁷
- In Pakistan, another field experiment [measured demand for microinsurance](#) after severe flooding in 2010¹⁵⁸
- 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 Tanzania¹⁵⁹
- A large natural field experiment to identify the effects of formal savings on [inter-household transfers and the safety nets of the poor](#) in villages in Malawi¹⁶⁰
- 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 Philippines¹⁶¹

Strengths

Permit control of variables

Because experiments take place under controlled conditions, and with lab experiments normally in the researcher's institution or place of work, it is usually 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 within certain statistical parameters "cause and effect" relationships (e.g., that opening a bank account leads to greater savings). 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. 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.

This means that it is possible for other researchers to confirm or challenge a study's results. It also means that studies can be readily compared across different groups.

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 generalizable 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.¹⁶² It is also important to conduct careful pilot studies when setting up an RCT. Testing results through multiple studies can strengthen generalizability.

RCT field experiments demonstrate impact

An advantage of randomized controlled trials (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.¹⁶³

In fact, David Roodman, in his book [Due Diligence: An Impertinent Inquiry Into Microfinance](#),¹⁶⁴ argues that randomized trials 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 RCT research in developing nations.¹⁶⁵

Limitations

Design flaws can invalidate experiments

The effectiveness of experiments is dependent on a 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; for reasons of validity, the entire experiment may need to be run again if an error or omission occurs.

However, in rigorous lab as well as RCT experimental studies, researchers check for lack of balance, [spillover effects](#)¹⁶⁶, or other unexpected issues in the randomization process over the duration of the study. [see appendix, blog post 6] Researchers adjust or re-randomize 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.¹⁶⁷

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 critical 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.¹⁶⁸ This is known as the “Hawthorne Effect.”¹⁶⁹

The Hawthorne Effect changes depending upon whether your research participants are interacting with each other or if they are 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.¹⁷⁰ In cases where participants are anonymously interacting with other participants, it is often observed that 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 lab 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 Industrialized, Rich, and Democratic countries).¹⁷¹ However, 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.

Limitations specific to Randomized Control Trials

A number of issues specific to RCTs should be given particular attention when

RCT experimental design is part of the 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. Whereas resources are often scarce with our without the intervention and it is generally not possible to give everyone access, for those who do receive the treatment there is also an “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 services being rolled out. Other kinds of tensions may be generated in treatment groups where interventions can be perceived as yet more handouts or interference from powerful outsiders. And what comes after a study has finished? Long-term follow-up is not always possible, limiting study participants’ ability to give feedback and researchers’ opportunities 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](#).¹⁷² 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 such as in the US, 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.¹⁷³

RCTs may also be supplemented by qualitative research, including 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 and often yield crucial insights for understanding issues of reception, uptake, and 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 biased 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 two marshmallows. 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 "Risk Preferences are Not Time Preferences" (2012).¹⁷⁴ 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 7 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.”¹⁷⁵

An important part of research design was to minimize 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 explain,

“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 (Frederick, Loewenstein, and O’Donoghue 2002). That is, perhaps certainty, not intrinsic temptation, may be leading present payments to be disproportionately preferred.”¹⁷⁶

Hence people may not be biased towards the present at all, but 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, that is, 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.¹⁷⁷ Experiments with human subjects depend upon isolating a variable that is tested under laboratory conditions. Participants are often not told exactly what the study is

trying to test, because they may change their behaviour to fit in with the experiment. 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 the 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.

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 organization. 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.¹⁷⁸ 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 because it 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, experimental subjects explained the rules in Spanish. They 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 have to 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 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.”¹⁷⁹

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.”¹⁸⁰

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,¹⁸¹ 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.

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;” that is, asking participants to bring along their friends to participate in the study. 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 new participants feel pressured to participate](#).¹⁸² 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: Randomized Controlled Trial: Innovative and Interactive Ways to Improve 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 of particular interest for consumer finance research.

Research shows that [women are key actors in making financial decisions for the household](#).¹⁸³ 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 income and 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 randomized control trials (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.¹⁸⁴

[Kc and Tiwari’s ongoing work](#)¹⁸⁵ on gender and financial literacy has spread across multiple projects that served in some respects as “pilot” studies for the case discussed here. In Dharavi slum in Mumbai they examined women’s practices of storing and hiding money in the home 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 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 ability to meet savings goals often remained out of reach for 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 capacity for building up savings.

Method

Inspired by a [randomized control trial in Kenya](#)¹⁸⁶ that introduced a lock box to women market vendors and male bicycle taxi drivers, the experiment set out to test the effectiveness of both financial education and savings tools beyond the question of bank access. They hypothesized that financial education was important, but insufficient if not accompanied by appropriate savings products.

The researchers incorporated quantitative and qualitative methods within the randomized control testing 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). Two hundred and three women, all of whom belonged to socio-economically disadvantaged groups, were divided into 4 treatment groups and one control group (40 women each). The majority of 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 SHG's 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 promoted programs, such as bank loans; women were therefore saving in order to be part of the group.

- A. (Control) no intervention
- B. Women received an alternative saving tool: a lock box and a key.
- C. Women received financial literacy training.
- 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.
- E. Women received financial training, a lock box and a key as well as a financial diary. (p. 5-6)

Women who received the lock box were allowed to keep the key, but asked to make a “soft commitment” to open it only when they deposited money at the bank or with their SHGs.

The researchers hired women from the village to run the financial literacy training. It was important to the project design that instructors were women in terms of capacity building and because gender dynamics played a significant role in the savings and literacy interventions. Teachers also needed to be good instructors to whom study participants could relate; 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 collecting data on important socioeconomic factors such as savings strategies with informal and formal financial services and challenges women experienced in their money management practices. Women were asked to provide a detailed account of savings sources and locations (including at home) and their total amount of savings at the time of interview was recorded. SHGs were the most popular and important mode of saving, but many women also saved money at home. (p. 21)

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 0.¹⁸⁷ Women’s financial status was also given a score based on variables such as access to formal financial services and ability to make household financial decisions was determined and given a score.¹⁸⁸ During the randomization process, statistical tests were performed on the scores and baseline data to ensure that there was no meaningful difference between 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 after the intervention and focus group discussions were organized for the fourth visit. 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.

At the time of the final visit and the end of 3 months the researchers collected data on women’s savings after the intervention had been completed. Women were also asked how their use of the savings tools impacted spousal and household relationships 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 key dramatically improved their savings, with the context-specific financial story-telling tools enhancing women's attitudes toward saving for those who received the treatment.

Women with a higher literacy score were more likely to visit banks. Households that used formal financial channels showed more significant daily savings than those 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 therefore protect the money they did save. During the time of the intervention, 50% of 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 (p. 17).

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 to 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 \$0.05). Perceptions about formal financial institutions were also measured at each visit; at the beginning of the study only 42% felt that banks were "customer-centric," with 76% reporting this to be the case at the time of the fifth visit.¹⁸⁹

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%.¹⁹⁰ The researchers noted some spillover effect with women who received the financial training sharing some of their knowledge with neighbours or their fellow SHG members.

The study showed that financial education could have an impact on its own and change attitudes about formal financial institutions. Yet as Deepti 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.”¹⁹¹ 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 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 appropriate to the local context. It also suggested a sustainable interim solution to formal financial access because it 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 where 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 not only knowledge but also 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 remitter’s choice of providers or use of services.¹⁹²

By building in different control groups for the financial education training, the study made visible the impact of financial education relative to the introduction of a savings tool. In agreement with similar but larger-scale studies,¹⁹³ 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 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 RCT with qualitative, participatory methods over a longer time 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 women experienced new tensions in their relationships with husbands and altered household dynamics as a result of their participation in the study intervention. 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.”¹⁹⁴

“Multiple visits allowed the researchers to follow 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.¹⁹⁵ 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 particularly when research is about people’s finances and money, research participants are forced to discuss and reveal intimate details about their personal wealth and well-being. “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.”¹⁹⁶

Deepti Kc emphasized that the village women whom 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.”¹⁹⁷ 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.

[Toolkit for the Evaluation of Financial Capability Programs in Low- and Middle-Income Countries](#) (2013, International Bank for Reconstruction and Development / The World Bank)

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: Design, Analysis and Interpretation](#) by Alan S. Gerber (W.W. Norton & Company)

[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 21 Financial Training. Photo courtesy of Deepti Kc



Figure 22 Lock Box. Photo courtesy of Deepti Kc.

Challenges in Consumer Finance Research

We hope that you have enjoyed the Consumer Finance Research Methods Toolkit and the many interesting and innovative applications we discuss.

Just as consumer finance itself is in a state of flux, so is research in the area changing rapidly. Since the first wire transfer of money occurred in the 19th century, consumer finance researchers and practitioners have had to continually adapt to new technologies, infrastructures, human mobility, consumer needs, and, of course, financial globalization.

Rapid changes in consumer finance present significant methodological issues, and it is becoming increasingly difficult to tackle these problems using one method alone. Instead, issues are often best compensated for through combining quantitative and qualitative research.¹⁹⁸ This means that collaboration and teamwork are just as important as methods and numbers in building a foundation for understanding human financial behaviour in its ever-changing complexities.

For example, data sets can be a fantastic way to learn about consumer finance practices and trends. However, new financial products are appearing every day, meaning that statistical data are not up-to-date. Moreover, diversity in product use may not be accurately reflected in

statistics. Relatively few studies collect information about all the financial tools people use, and sometimes one mode of payment, such as a credit card, may be used to purchase further consumer finance products (e.g., buying online insurance, sending money, depositing money in an e-wallet).

In a similar vein, financial diary studies can help us understand how people combine financial products, but may shed relatively little light on the social interactions that guide product use. And ethnography's suite of methods can provide deep insights into social and cultural influences on behaviour, but it generally does not contribute the kind of numerical analysis that helps us to understand behaviour at a large scale.

To better understand what consumers do and how they do it, we need to be aware of the limitations of our chosen field and be ready to use other methods when necessary. This may well entail forming collaborations with professionals who are experts in their particular field or methodology. This toolkit gives practitioners a starting point to think about what other methods they might use and with whom they might collaborate.

As we move forward, what are likely to be some of the major challenges we face in accessing good data and producing adequate analyses? The studies discussed in this toolkit provide some telling clues.

The north / south divide

Changes in consumer finance have some interesting implications for how we try to understand the global north / south divide. Companies seeking to invest in developing economies are keen to find out how consumers think, act, and most of all, how they spend their money. For example, microfinance institutions, mobile money providers, and money transfer services have all sought to capitalize on the “fortune at the bottom of the pyramid”¹⁹⁹ while delivering social benefits of greater consumer choice and more affordable services to broad segments of populations.

The dismantling of the north / south divide is only set to increase as more markets come online. Not only is a degree of “product democratization” taking place, it is problematic to view the “Global North” as leading the charge with the “Global South” struggling to keep up.

Many innovations in consumer finance *begin* in the “Global South.”²⁰⁰ 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.

Researchers and practitioners may find that, if they want to keep up-to-date with developments in consumer finance, they need to look beyond the usual WEIRD (Western, Educated, Industrialized, Rich, and Democratic) nations. This point holds true for keeping up-to-date with research advancements

as much as with product developments. As the IMTFI's research network attests, there is a wealth of valuable information being produced by researchers from all over the world.

Research findings are also challenging how we view “the poor.” For example, financial diary studies challenge common assumptions about people living in poverty, such as that they lack financial tools or don't know how to manage their money. Similarly, the increasing use of randomized controlled trials (RCTs) represents a shift in the development world from assuming that an intervention in one country will be successful everywhere, to actually testing what works and adjusting accordingly.

Just because an intervention or program is successful in one poor country does not mean it will be equally successful in another. Mobile money has met with extraordinary success in Kenya, but has struggled to get off the ground in dozens of other countries for various reasons, including scaling, branding, and insufficient product education.²⁰¹

Globalization and migration also challenge the north / south divide. As various social scientists have noted,²⁰² the “transnational capitalist class” in one country (say, Tanzania) may have more in common with the same class in another country (say, the USA) than with their own fellow citizens. But it is not just the wealthy that form social groups across national borders.

Countless studies have pointed out that all kinds of migrants maintain family and

commercial ties across borders, often for many decades after they originally migrated (including David Stoll's work on Guatemalan migrants, discussed in *Case Study 2* in *Ethnography*).

These movements have crucial implications for consumer finance, since people send money backwards and forwards across borders. Remittances to developing countries are estimated to have reached \$436 billion in 2014,²⁰³ not because of wealthy people sending money, but because people of far fewer means are geographically mobile and maintain links home to their families and friends. Private remittances often make up a significant proportion of national GDP (in places like the Philippines) and are seen increasingly as potential resources for local/national investment.²⁰⁴

And as more and more consumer finance products became globally available through the Internet, we have greater choice as to *how* we send money around the world. We are no longer limited to using our local bank or a product that is offered domestically. The north / south divide increasingly makes little sense as a research framework, either from a consumer or product perspective.

However, globalization does not equal homogenization. Humans maintain diversity even as we migrate and communicate around the world. Just as it's worth looking beyond the west in our research, then, we could benefit enormously from conducting comparative studies. Comparing the consumer practices and financial repertoires of nations or other subsections of

populations can help us understand why people might respond to changes differently and how they adapt to changing markets. This can help us to better design and target our products, programs, and policies in the future.

Human welfare and well-being

Human welfare and well-being will continue to be critical issues in consumer finance, especially with respect to how consumers everywhere make decisions. To figure out what kinds of welfare issues are important, we need to think about what choices and conditions different demographics are facing. Simply living in a wealthy country with good financial services is no guarantee that people will benefit from financial innovation.

For example, the Eurozone boasts a high level of integration in regulation, currency, and banking infrastructure (notably the Single Euro Payments Area, SEPA). However, there are significant socio-economic differences between households and nations, including income levels, product availability, demography, and social/cultural specificities. Poverty, debt, literacy, and inequality affect people everywhere and shape their ability to take advantage of consumer finance innovations.²⁰⁵

The benefits of consumer finance can also be difficult to measure. One methodological problem is that global disparity in relative income levels shapes how researchers conceptualize consumer choice. It is very difficult to compare the quality of choices available to, say, a Haitian trader earning \$2000 per year with

an American grocery store owner earning \$40,000 per year.

Whether the choices available to these consumers are adequate depends on their needs and the context in which they are operating. In fact, sometimes people who have no access to formal banking facilities have *more* choice between consumer finance products (formal and informal) than someone living in a wealthy city. When assessing choice, we therefore need to take into account the range of services available, their quality, consumer needs, and avenues for consumer redress.

Another problem related to well-being is introduced by the fact that 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 choice. This conundrum has been long observed in the insurance industry, where people particularly struggle to understand what different policies will actually cover.²⁰⁶

This has also been the case with credit products, 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 proliferation and asymmetric information is compounded today, since products are both more numerous and come from a far greater range of companies and geographic locations.

Without a clear picture of how people are using products, we cannot develop a

comprehensive understanding of how digital finance impacts consumer well-being. Research design needs to take into account the fact that people are shopping for consumer finance products in a global market, and that this global market presents new challenges to consumer well-being and welfare.

Inequalities

At the same time that digital finance promises to reduce inequalities, it can exacerbate them in other ways.

Digital finance has mixed implication for inequality at the household level. For example, Sibel Kusimba's research shows that a benefit of mobile money for Kenyan women is that they receive more remittances than men [see *Case Study 2* in *Verbal Interviews*]. However, the flip side to this success story is that women continue to control less capital than men—and hence women are still very much unequal.

Good research and policy design can illuminate both sides of that story and help to close the “gender gap,” such as through the development of products targeting women's needs and priorities, or the implementation of laws regarding equal pay and property rights.

Similar problems of inequality exist in larger society. As we discussed in the Interviews section of this toolkit, research on Hispanic college students [Case Study 1 in Interviews] showed how ethnicity can be correlated with financial practices, but not necessarily in ways that we might expect.

Professor Watchravesringkan found that family members had a positive influence on Hispanic college students' behaviours, and suggested that this insight could be used to develop financial management learning programs. Good research can productively challenge our assumptions about how inequalities affect financial practices.

Another methodological problem is that social categories such as “race” and “ethnicity” can be methodologically problematic, not least because our definitions of these terms change over time. How do you define a research population based on ethnicity or race? By study participants' own self-reporting? Based on government statistics or census categories?

It is difficult to point to a “right” way to define a population that experience inequality, since this definition will depend upon what the research is trying to show. This is particularly true when conducting international comparative studies, since social categories in one country may be completely irrelevant in another.

How might cutting-edge changes in consumer finance exacerbate inequalities? One obvious answer is that new products and platforms feed a “digital divide” between people who have access to technology (and know how to use it) and people who do not. The digital divide can be self-reinforcing if it helps people who are already in the know increase their wealth and social status, and pass these lessons on to their children.

Yes, mobile phone access is nearly universal these days, and it is not particularly difficult to learn how to use mobile money. But whether mobile money and other “products for the poor” decrease poverty and inequality is questionable.²⁰⁷ There is a risk that people who have technological literacy and access will gain an advantage over others, thus *increasing* the digital divide. Moreover, access to financial tools is only useful if people have money to manage (such as income or receipt of remittances) in the first place.

But transformations in consumer finance do not *inevitably* exacerbate inequalities. There are many excellent and encouraging examples of people benefitting from changes in consumer finance. Some of these can be classed as “interventions,” such as the provision of microfinance services.

As David Roodman points out in his book [*Due Diligence*](#), there are just as many examples of microfinance resulting in net benefits as there are of it causing problems such as indebtedness. Access to reasonably priced credit can indeed be highly beneficial—but it must be applied wisely. Many financial diary studies have now shown, people living in poverty are perfectly capable of managing their own complex finances and, given sufficient resources, will competently manage their own futures.

The trick with managing inequalities is being aware of the multifaceted effects that consumer finance can incur. Product innovation and mobility create wonderful opportunities, but can also put consumers at risk of greater indebtedness,²⁰⁸ reduced

consumer protection, fraud, and even simply being overwhelmed with choices (a phenomenon well-recognized by economists and psychologists).

Researchers, practitioners, and regulators need to be aware that consumer finance product consumption today is taking place in a complex global market, and design our research and policy accordingly to protect consumers. Solid research will inform us of what kinds of interventions are needed, how regulation and policy might respond, and in what ways we need to accommodate people's existing practices.

Erin B. Taylor and Gawain Lynch
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Figure 23 Money Lei, photo by Bill Maurer

Blog Post 1

This post by Jacobo Menajovsky illustrates how shoes, like data, can be read for indicators of use. Shoes leave footprints for data analysis. But inversely, we can also think about how big data might also leave footprints for qualitative research questions and modelling.

Originally published April 16, 2012

Where is the data? Analyzing customer footprints for better product design

By guest blogger Jacobo Menajovsky, Senior Data Analyst – Grameen Foundation



These are my daughter's old shoes.

We just took them out of the closet to pass them on to her younger brother who's recently started walking, but when I took a closer look at them, I wondered if their best days weren't behind them. Call me crazy, but I immediately started decoding all the signs and indicators of their usage. Yes, to me, data is everywhere.

We are constantly gathering, interpreting and acting on data. Think about it. Every time you walk into a new situation, your "decision support system" starts to process past data to help you adjust to the new experience. Your brain is actually modeling those signs and symbols (data), building connections and classifying them into categories.

What if you wanted to understand how these shoes were used? Do you think you could reconstruct the past simply by looking at them? There are lots of signs and indicators: a broken ankle wrap, a heavily-rubbed toe cap, and many holes.

Now let's move from data gathering to data modeling. When we put all this data to work we can build a great profile of how the shoes have been used. It looks like they went through a lot of kicking and dragging, and plenty of crawling. If you look at the soles, though you'll see that they're unworn. So, it seems the upper parts of the shoes were used more than their bottoms. This observation might even give you a few ideas about how to improve shoes like these and make them more durable. This is exactly what we call improving your product using customer footprints. In this case, the footprints are literal!

As a data scientist and microfinance practitioner, I am always searching for signals and indicators that show how poor people are using products and services. I believe the best way to understand their behavior is by analyzing their footprints. This data can come to me in various formats (e.g. digitally or on paper) and platforms. I often have to put in a lot of work before I begin analysis, but if done correctly, it gives me a lot in return.

In an ideal world, records would have unique customer IDs and information about the products that each uses as well as past transactions. If you are really lucky you may also have some socio-demographic information like age, gender, rural/urban indicator, branch or location, household composition, family size, and poverty level.

The more data the better. Your data set can help you answer some key business questions: What's the penetration of product A at different locations? Is this affected by poverty level or household composition? What about understanding our customers' lifecycle? Do we see differences in outstanding balances at different customers' tenures? Our [recent study on implementing data analytics](#) provides an exhaustive list of business questions and analytic approaches.

At Grameen Foundation we are working towards helping pro-poor organizations crunch their numbers, understand their customers better, and make more informed decisions. We are also refining our data collection process, using the right set of mobile data collections tools and state of the art analytics to better understand the challenges and needs of the poorest. After all, it's only by gaining better insights that we will contribute to the development of more tailored products and services – from baby shoes to microfinance products– and that's essential if we want to improve the lives of the most vulnerable people in our planet.

<http://blog.imtifi.uci.edu/2013/04/where-is-data-analyzing-customer.html>

Blog Post 2

IMTFI Researcher, W. F. Mesfin, whose work is featured in “Ethnography” (Case Study 1), shows how his qualitative study of cash usage in the market place might translate to digital research and digital product design.

Originally published May 20, 2014

One researcher's thoughts on money and metadata based on fieldwork in Ethiopia

By IMTFI Researcher W. F. Mesfin

As a researcher I tried to unpack what cash money really is. I am an information systems expert and my analysis of mobile money is primarily pragmatic and depends on my readings across different domains, particularly sociology and money, anthropology and money, behavioural economics and money. I get knowledge and information from these domains and combined with my own areas of expertise I am able to reflect on what mobile money or digital money should look like and the nature or elements of the kind of system that can handle mobile money. Here are my reflections:

First what is money and how it is changing? Even though there are different categories of money from social and anthropological points of view, in this writing I am interested in looking at cash as money and thinking about how its changed forms affect system design. To me cash money is simply information with some specified metadata, like color, image or icons, numbers, and some other hidden security controlling means (see the figure below). People agree to accept this information as money because they know they can give it to others without concern. What makes this

piece of paper (cash money) and or coins is the information (metadata inscribed on them).



Metadata

This is to say that if we remove these metadata, the remaining piece of paper cannot be considered as money. And thus, these metadata are making money valuable and make people develop trust and confidence. But with the digitization of money, in its current state of research and development, these metadata are excluded from existing platforms and solutions. In the current platforms or solutions, money is represented as a simple positive rational number of the form say 2.89 USD, 0.89 USD, 247 USD etc, excluding the metadata as well as the different money denominations. For example, in Ethiopia our currencies are denominated as (5 cent, 10 cent, 25 cents, 50 cents, 1 birr, 5 birr, 10 birr, 50 birr, and 100 birr notes). This indicates that we cannot pay (get paid) for example exactly 12 cents, 11 cents, 9 cents, 9.87 etc. However, we know that with the digitization of money, it is possible to accommodate any amounts and thus, unlike in the case of cash based transactions, in digital transactions making changes is not an issue. That is the bonus of current computing and mobile money technologies. But such money representation with positive rational numbers and removal of money's metadata elements faces challenges when it comes to people that are illiterate. For example, illiterate users know their balance by counting the material money. They do not know what numbers 20, 40, 12 etc mean. Rather, they know these figures when they are physically handed them and able to count them by hand. The following paragraphs outline some of the

design implications of my ethnographic research I did in 2012 in Ethiopia among open air market participants.

Purposes of money's metadata:

- *Images or icons:* The icons or images on money bills have different purposes like: as national identity (collective national values). For example, Ethiopian money bills have pictures of coffee plants, farmers, a map of Ethiopia, historical buildings, the signature of the governor, and a tractor machine. Some countries also inscribe photos of elite individuals and their sacrifice for the nation, for example photos on USD. In Ethiopia, the icons and images inscribed on money bills enable illiterate users to identify money bills.
- *Security tools:* These are features inscribed on money bills to identify real money from forgery. The problem with these tools is that, when the bills get old, these features usually fade away and may not be visible, which makes differentiating forgery from valid money bills difficult.
- *Serial numbers:* These have also a very important role. When all or parts of these numbers are lost (faded away), individuals do not accept. Such money bills have to be taken to banks for replacement, as per the respondents from my field study. Otherwise, they become worthless, as people, particularly illiterate users will not accept for change during transaction.
- *National identifier:* This is written in both English and Amharic and identifies the legal issuer (governor).
- *Color:* All Ethiopian money bills are color coded, which enable illiterate users to identify different bills. Color and images on money bills are used for counting and computational purposes. For example, illiterate individuals know the sum of 10 birr and 5 birr will give 15 birr and yet do not know how to spell these numbers. When they are also asked to pickup money bills of say 50 birr from a lump sum of bills with different denominations, they easily identify them through their color. Thus, it could be said that color of money bills is a means to identify them.

- *Economic value:* These are numbers written in terms of roman numbers as 1 birr, 5 birr, 10 birr, 50 birr, and 100 birr as well as Ethiopian numbering systems and the Amharic language. Birr has denominations of 1, 5, 10, 50, and 100.



The material nature of money bills also has an added value for illiterate and visually impaired people. Illiterate people make some simple mathematical computations (additions, subtractions, multiplication, and divisions) by moving money bills here and there as they cannot accomplish these through writing numbers on paper or calculating machines. For example, in order to make payment or receive payments people count money bills and in order to count them, people usually sort and arrange them according to the denominations (from smallest money bills to the largest) and then hold the stack in one hand and count with the other hand. In this context digitization can make illiterate people frustrated, unless there are solutions for this issue.

One thing we learned is that current mobile money platforms and solutions did not consider these metadata in their design. My reflections and proposed solution for this problem will be presented in two forthcoming papers to be shared on the IMTFI Blog once they are published.

Money organization

From my open air market study I have also observed and understood that illiterate merchants and customers distribute their money among different bags or pockets. They also give different labels or names like bag for sales from coffee, sales from salt, and sales from other materials. When they need a change, they try to look into the respective bag. In fact if there are no changes in the necessary bag, they take from another bag and return the money later. It is kind of a “loan” from the other bag. I call this “distributed cognition”. They remember from which bag they took change and want to replace the amount they took. Thus, it appears that from a technology design perspective, designers need to be aware of such cognitions and practices and its implication for design.

Problems with cash

I also observed that even though the material property of cash helped illiterate people count and know their balance as well as the difference between different currency notes, (based on its color), it has some limitations. It can get old and stick together, part of it can be torn and people are not willing to accept for change, some individuals also make forgery money and easily cheat illiterate rural people. It also creates difficulty for making changes, if there are no changes. But, with the upcoming mobile or digital money systems, even though it appears that the issues of forgery, sticking together, and changes can be addressed, the issues of operationalizing technologies for these issues can not be an easy task. Addressing one of the issues will come at the expense of another.

Final thoughts

Finally, based on the nature of money digitization and money handling experiences of illiterate people in developing countries, I feel that new technologies need to have capability like audio in order to embed money's metadata, and enable individuals' to experience "physicality within digital environment". I also recommend interested readers to consult the work of (Balén et al 2009) for more reflections about money digitisations as related to ease of usability, security, and auditing. In this case I want to make a note that the work of Balén et al. (2009), focuses on literate people while my reflection is in the context of illiterate people who have different money practices.

For further details on the project [see here for the final report](#). You can also read Mesfin's working paper from 2012: "[Understanding Social Relationships and Payments Among the Poor in Ethiopia](#)" or email him with any comments and suggestions: mesfinfw@gmail.com.

<http://blog.imtffi.uci.edu/2014/05/one-researchers-thoughts-on-money-and.html>

Project Page:

Year: 2010

The Impact of New Technologies on Social Payments

<http://www.imtffi.uci.edu/research/2010/fikre.php>

Blog Post 3

In this post, Charmaine 'Ilaiu Talei describes how she incorporated a knowledge-sharing fieldtrip into the project design. Research participants were given the opportunity to hear and "vote" on the accuracy of the study's main conclusions. She also explains how study participants helped to sharpen the research framework itself during the data collection phase of research. See the toolkit entry, *A Note on Ethics*, for how this applies to questions of ethics and informed consent.

Originally published January 22, 2015

Understanding the transformative value of Tongan women's *kau tou lālānga*: mobile mats, mobile phones, and money transfer agents

By IMTFI researcher [Charmaine 'Ilaiu Talei](#)

Kau tou lālānga is a group of Tongan women who collectively weave one another's fine pandanus mats to barter and sell. Their prime customers are Tongan women living in diasporic communities around the Pacific Rim. Our research has determined two business negotiations of *kau tou lālānga*: firstly, to weave per lineal foot, also known as *'iate*, and secondly, to weave towards a 'gathering', or *kātoanga*. An *'iate* negotiation starts with a customer, usually a local person, making an order to a collective to weave one or two mats—only a small quantity. The second negotiation, *kātoanga*, is a gathering between a number of weavers from a collective and a group of customers, who are mostly Tongan women from overseas. Before

a *kātoanga*, the parties involved negotiate the large number of mats to be exchanged, the sum of cash for the order, and the date and venue of their gathering is also agreed upon. *Kātoanga* agreements reach higher annual returns than *'iate* negotiations.



A *kau tou lālanga* in Kāmeli, Neiafu Vava'u, Tonga. Photo: C. Ilain Taleidd

Tongan mats, or *fala*, are part of a wider system of customary gift exchanges within Tongan society. In this customary sense, Tongan mats are cashless forms of value storage. Such value is traditionally activated during a Tongan occasion, such as funerals, weddings and birthdays. A traditional gift from guests to hosts or vice versa could consist of *tapa* cloth and several types of fine mats. Thus, fine mats—the products of *kau tou lālanga* businesses—are highly prized items in Tongan material culture. For this reason, this work is part of a wider discussion of gifts of exchange studied by anthropologists: Adrienne Kaeppler (1999), Phyllis Herda (1999), Ping-Ann Addo and Niko Besnier (2008), and Fanny Wonu Veys (2009). However, their analyses exceed the purposes of this blog.

The Kingdom of Tonga is located in the South Pacific (20 00 S, 175 00 W) and is an archipelago of 169 islands stretched throughout 747 square kilometres. The main

central island is Tongatapu, where the capital Nuku'alofa is located. Three fieldwork trips were conducted within the project timeframe. A total of eight weeks in two remote islands groups: Vava'u and Ha'apai. Being remote islands they generally have less access to a wider range of cash making opportunities in comparison to the main island. Vava'u and Ha'apai are also mat making epicenters. The fieldwork sites in Vava'u include the rural village of Leimatu'a and Kameli in Neiafu town. In Ha'apai, the sites include the rural villages of Fangale'ounga on Foa Island and Pukotala on Ha'ano Island, and finally, the urban village of Pangai. These village sites were selected based on existing contacts and referrals of where to best find *kau tou lālanga* groups. A total of 24 participants were interviewed over the course of three trips, 14 from Vava'u and 10 from Ha'apai. Some 20 were sole weavers and all were women and 4 acted as trading agents, of which 2 were men.



A participant displaying her mats (*fala hinehina*) for a *kātoanga* with her United States of America based Tongan customer, Tongatapu, Tonga.

Photo: C. Ilain Talei

The first objective of this research was to understand what is the transformative value of *kau tou lālanga* in Tonga and secondly how mobile phones and money transfer platforms help to achieve this transformation.

The transformative value was first defined by the authors at the project's conception as, 'the potential to move away from an uncontrollable financial situation to a position where one can manage financial challenges with confidence'. The findings have refined and elaborated on this statement.

The first survey investigated (a) motivations for joining a *kau tou lālanga* (b) understanding one's financial role in their family and (c) what one spends their profits or wages on, the survey attempted to shape an initial understanding about the transformative value of *kau tou lālanga*. Preliminary findings show that paying childrens' education fees, maintaining one's home through utility bills, feeding dependents and donations to church offerings and supporting village fundraisers are reasons why participants weave and join *kau tou lālanga*. The three top reasons ranked in order are (1) to pay household utility bills, (2) to pay childrens' education, and (3) to make church donations.

It became clear after the first survey that the original definition was limiting the emotional motivations of the weavers. For this reason, the interviews of the second fieldtrip included asking weavers why they chose to do this business and in other words what value they see in this *kau tou lālanga*? Their responses certainly highlighted that it is not about creating a huge savings account but instead creating a sense of personal satisfaction when one has met the needs of their families. The outcome of providing therefore embeds value into what they do as weavers.

Our final fieldtrip allowed us to present back a summary of their responses. They were asked to vote yes or no if they agreed with this statement as accurately describing transformative value of *kau tou lālanga* and why they choose this business. All the weavers present at all presentations answered in confidence 'yes' to this statement of transformation. Translated into English:

The transformative value of this business for you as a weaver is not about receiving money to spend or save, but being enabled to financially satisfy the needs of your family, at the time of need and every time of need. Importantly, it is from this position that you gain emotional and mental confidence. It is for this significant reason why you choose to weave and partake in the business of mats.

Moreover, this study broadens our focus on transformations that take place because of the business of *kau tou lālanga*, such as socio-cultural changes in the role of female weavers in their families. Traditionally, mats have been considered the woman's domain in Tongan society and it was shameful for a man to dabble in women's work. Evidently, the financial appeal of the business has normalized the dual-gendered activity of making mats and has helped to remove the male shame of helping, especially when many hands do make the work easier. Undoubtedly, *kau tou lālanga* is changing the female weaver's role and consequently others in her family and within the wider Tongan society.

In answering the second objective of this project, the findings reveal that there is a technology knowledge gap for older members of collectives, who are also the leaders and decision-makers in the group. This gap delays business innovations like mobile money and the use of banking applications to facilitate transactions. The very establishment of *kātoanga* negotiations stresses that weavers and customers alike still prefer to transact face-to-face, so customers can thoroughly check mats before closing a deal and weavers can count their money before releasing the mats. In this way money transfer agencies have not displaced the practice of *kātoanga*, which explains why money exchange platforms were less important for some collectives and less used by such weavers than what was first assumed.

The transformative value of *kau tou lālanga* has been an invaluable investigation because now we can begin to

understand the ‘livelihood’ of Tongan weavers; revealing how *kau tou lālanga* affects the weavers and their dependents but also how weavers shape this business to achieve their customary and financial goals

<http://blog.imtfi.uci.edu/2015/01/understanding-transformative-value-of.html>

Project Page:

Year: 2013

Understanding the transformative value of Tongan women’s kau tou lalanga: mobile mats, mobile phones, and money transfer agents

<http://www.imtfi.uci.edu/research/2013/talei.php>

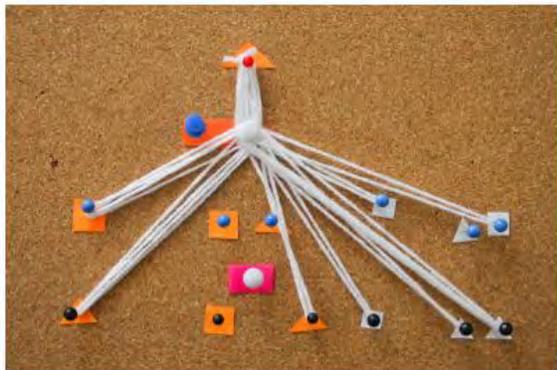
Blog Post 4

While this post is oriented around a more academic audience, it shows how simple tools can be used to map card use distinct from card ownership. Researchers wanted to see the networks created by the practice of card lending, which was otherwise invisible to retail companies that only tracked transaction data connected to a single “owner.” String and push pins help to visualize qualitative data relevant to the data sets collected and analyzed by retail entities. The study findings presented here can be useful for policy makers evaluating credit scoring and indebtedness, or for retail outlets and banks in adapting product design to existing use or unmet credit needs.

Originally published November 13, 2012

The Economy of the Quota: The Financial Ecologies and Commercial Circuits of Retail Credit Cards in Santiago, Chile

The following is a translation of preliminary results from research conducted by [José Ossandón](#), with the support of Tomás Ariztía, Macarena Barros, and Camila Peralta, and funded by IMTFI.



Luisa is a 54-year-old housewife who lives in the municipality of La Pintana, south of Santiago. Seven others live in her household: her husband Patrick, her children Nacho, Paty, and Andrea, her son-in-law Rafael, and her grandchildren Camila and Cristian. Luisa also has a fourth daughter Katia, who lives with her husband Rodrigo in the same neighborhood. Luisa's husband Patrick works as a freelance painter sporadically, and he earns on average 150,000 pesos (US\$312) a month. In addition to housework, Luisa manages a *kiosco* or small shop in her home, which earns her between 20-30,000 pesos a month. Andrea and her husband work and take care of their own expenses. Paty, in turn, is unemployed and so receives help from her parents to cover her expenses and those of her daughter. Nacho is studying nursing with the support of a loan (called a *Crédito Aval del Estado*, or State-Guaranteed Credit) and recently has begun to receive his first income as an occasional worker in construction. Luisa and her family maintain their home with the money that Luisa and her husband earn and with the financial support they receive from their children.

With regards to her financial life, Luisa has a savings account, an emergency fund of 40,000 pesos cobbled together with money from the kiosk in the BancoEstado, a state-owned financial institution. Since

Luisa and her husband have informal jobs, neither has access to checking accounts or bank loans. Luisa is, however, an active participant in three informal financial institutions, two *pollas* (rotating savings organizations) and a *caja común* ("common fund") that functions as a Christmas savings club. The *caja* can also be used as a source of credit, but under certain restrictions. Loans must be repaid with interest, there are fines for late payments, and if a member misses her quota for three consecutive dates, she is removed from the group and the money she has contributed up to that point is not returned to her.

Luisa also has access to loans offered by retail companies. Ten years ago, she acquired her first credit card in the department store La Polar and a few years later, ended up with cards from Paris, Corona, Tricot, Fashion Park, and Salcobrand. Two years ago, however, after feeling that her debts were spiraling out of control, she closed the Tricot, Fashion Park, and Salcobrand cards, and, a year ago, a loan renegotiation ended with La Polar blocking her card; today, then, she only holds cards from Paris and Corona. Luisa uses these store cards in various ways. For example, between September 2011 and February 2012, she used the AlmacenesParis card to purchase two pairs of sneakers for her son Nacho, a cell phone for herself, and merchandise in a supermarket, which is part of the same business group as the store and where this card is also accepted. Each purchase was paid for in six installments. She also used the Corona card for a cash advance.

But Luisa did not use her cards only for her own purchases. For example, between December 2011 and January 2012, Luisa lent her Paris card nine times to her daughter Andrea—three times for installment purchases of merchandise, another five times to purchase goods in the shop (shoes, an iron, an oven, and pants for her son), and once for a cash advance

consisting of six installments of 15000 pesos each. In addition, in February 2010, Luisa lent her card from La Polar to Andrea to buy a refrigerator; she also lent her Corona card to Andrea for an advance of ten installments of 10,000 pesos. Luisa has also lent her La Polar card to her daughter Katya for a cash advance and for a furniture purchase, and the Corona card to her daughter Paty to buy an iron in ten installments. On two other occasions, moreover, Luisa's son-in-law Rafael used her Corona card, once to buy himself sneakers and another time to buy a cell phone for his son.

In our qualitative study of the financial practices of thirteen households in three municipalities in low-income sectors of Santiago, we encountered many stories like this one. These stories, much like those recently [described by Ariel Wilkis](#), do not necessarily fit into the traditional categories associated with studies of popular finance. Here there is no clear demarcation between formal and informal financial inclusion. There is exclusion, without a doubt, in the sense that these stories are about people without access to bank credit, often because they do not have access to formal employment, or to so-called *créditos sociales* (“social credits”) from *cajas* and cooperatives. These stories also speak to popular finance, since like Luisa, many of our respondents are active participants in “pollas” or other rotating savings and credit associations. Yet, such stories also evince formal inclusion and economic rationality in the traditional sense. The credit cards of retail businesses are almost universally present in the homes we studied, and we encountered many stories of people who, over the years, have become experts on interest rates, loan renegotiations, and installments—a complexity that is multiplied if we also consider that many deal with several cards at once.

It is in this context that we encountered the practice of lending and borrowing retail credit cards. Obviously, we were aware before our investigation that, just as it is

common for Chileans to lend health insurance vouchers (*bonos*) to one another, they also lend retail credit cards to one another. What we did not expect was that in every home we visited, we would find such lending and borrowing and the degree of complexity that emerged as a result. In this way, little by little, card lending came to constitute the main object of our attention. In this post, we use some elements of recent work in economic sociology to begin to unravel what this is all about.

Sociology of the Quota

In short, it is not difficult to associate the practice of card lending to the basic principle of the new economic sociology, as [formulated by Mark Granovetter in 1985](#) (.pdf). At first glance, credit cards might appear to be private property, owned and managed by the person whose name is in the card, but closer observation of card lending reveals a parallel and collective circuit of debt—that is, a network. Still, how and what might we see were we to examine the lending of credit cards as a network? What are the nodes and types of relations? How to classify the types of actors involved?

Inspired by the description [offered by one of our favorite sociologists John Law \(2007\)](#) of the advantages of “pin boards” or bulletin boards as a way to think visually, we felt we should pursue a more experimental path to understanding such lending networks. Instead of working directly with relational data visualization software (such as Pajek), we, therefore, decided to embrace the flexibility afforded by using our own hands. Armed with the necessary materials—cork bulletin board, yarn, and pushpins of different sizes and colors—we met to search for a way to think visually about what we were finding.



This is the case of Luisa. The red pins represent her and her husband, and blue pins below, her daughters and sons. The large pins represent retail store cards. In this case, Luisa is the only one with cards—one from Paris, one from Corona, and another from La Polar. The yarn threads represent uses of a card involving some form of credit, and they connect the person who receives the loan of the card with the credit card used for the transaction. As can be seen, Luisa has used her three cards for personal transactions, but the same cards have also been used by her daughters and sons-in-law.

We completed similar exercises with the other twelve households. Seen below are the networks of retail card use in the households of Carmen, Marisol, and Yeni.

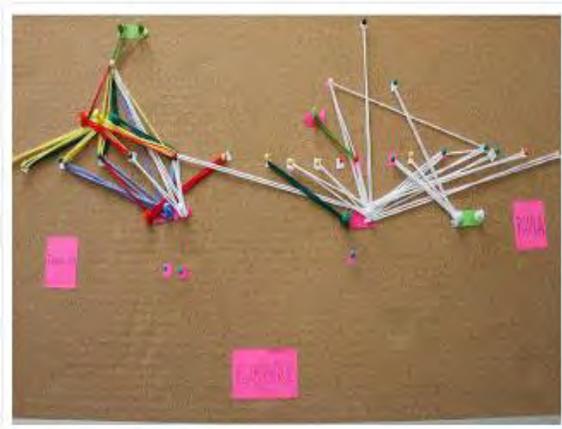


After several attempts, the images you can see here have left us satisfied as a good way of visualizing our data. But the central question remains: So what? What is this all about? As has been already mentioned and as can be seen clearly above, credit card lending practices produce networks. But what kind of collective or social formation are we talking about? At what level do these networks operate?

The Scale of the Quota Economy

One option is to focus on the nuclear family or household as the fundamental unit of such networks. As we saw in the same case of Luisa, however, card lending can span different family units living together in the same residence. A second option is the family or networks of extended kinship. Luisa not only lends her cards to her family members living in the same property, but also her daughter Paty, who lives in another house. In several of the cases studied, however, we found card lending extending beyond the family to friends and neighbors. The case of two homes that

were connected via two friends turns out to be instructive in this way.



A useful concept for expressing this particular type of social formation is that of “commercial circuits” [developed by sociologist Viviana Zelizer \(2010\)](#), which refers to circuits of economic transfers among a delimited group of actors, who bestow upon these transactions a shared meaning. These circuits of transactions establish a clear line of belonging and make use of a particular medium of payment. We suggest that each of these networks of credit card lending functions as a commercial circuit that frames or connects to existing collectives—neighborhoods, families, or households—but that also has its own emergent character and forms of inclusion and exclusion. Indeed, as shown in the first of the following citations, an important part of the interviews revolved around the edges or boundaries drawn when a commitment is broken and how the limits of these circuits can be re-established.

“Flor, my neighbor, was slow to pay, so now I don’t lend them [cards] to her, because then she takes a long time to pay and I have to pay everything myself. And afterwards, they screw you with the card.” (Luisa)

“Imagine, for instance, each installment is 10,200 pesos. I give my mom eleven or twelve *lucas* [Chilean slang for 1,000 pesos], I always give her a bit more, because they always charge my mom for the mail service, the use of the cards, whatever damn fee they add—a thousand of this, fifteen hundred of the other. It’s the same with my dad, they are always charging him five *lucas* extra, so I always give some money on top [of the installment amount] to my mom.” (Patricia)

Moreover, as the second quotation, taken from another case, illustrates, such circuits entail a system of parallel calculations, which are in fact often drawn in the margins of the monthly bill.

But what is lent? What is the medium of this circuit? To understand this, it is important to consider that here we are not talking about just any network. In more technical terminology, these are 2-Mode networks, since the actors are not connected directly among each other, but through nodes of a different type. What we have here are people connected among each other through the use of a common card. The cards, in turn, are not just any node. They correspond to what [Callon, Millo and Muniesa \(2007\)](#) have called “[market devices](#)”—that is, objects that do not only mediate between humans, but have an active role in the transformation of the relations that they connect.

Unlike a traditional commercial exchange, whose mode of payment is cash and for which there is no record besides the receipt, every transaction realized with a card is recorded, as the bills we receive at the end of each month repeatedly remind us. This information is key to the operation of retail companies, which statistically evaluate the behavior of each of its customers. The type of evaluation performed by Chilean retailers is called “[sowing](#)” ([Ossandón 2012](#)), and it consists of extending credit, or increasing the

credit limit associated with each card, not only based on external variables (such as income, age, or state of employment), but also on payment behavior. In other words, if the card lending among family members and friends is “managed” well, in the sense of paying off the debts as they are generated, the increased use of the card increases the credit limit assigned to it.

This brief “socio-technical” detour is important, because it allows us to understand something key, that the medium of the commercial circuit described here is the credit limit itself. People do not lend money, but the capacity to borrow and go into debt, their quota (or “*cupo*” in Spanish, a word that suggests both a bound and an allotment), that is delimited by the algorithms of retailers’ risk analysis systems. It is, therefore, no coincidence that at the center of our networks we find “*dueñas de casas*” (female heads of household). Their centrality is directly related to the “discovery” by stores’ analysts that adult women are statistically better “*pagadores*” (payers), despite sometimes lacking their own income. What stores probably do not know—or do not care to know, since their concern is timely payment, not a sociological understanding of what lies behind each customer—is that behind each card is the emergence of a new financial circuit, an entire “economy of the quota.”

In this post, we have used some visual and conceptual tools of economic sociology to begin to understand this economy. But this is only a first step. We believe that deepening our understanding of this economy of the quota (*economía del cupo*) is not only academically relevant, but also may help us to understand better how the boundaries between financial inclusion and exclusion are being reformulated today ...

* The names in the cases and quotations have been changed to maintain anonymity.

Text prepared by [José Ossandón](#) for 7th Chilean Congress of Sociology, University of La Frontera, Pucón—24, 25 and 26 October 2012. From the work of the research team led by Ossandón, with the participation of Macarena Barros, Camila Peralta, and Tomás Ariztía. Study developed in Programa de Estudios del Consumo y los Mercados, [Instituto de Investigación en Ciencias Sociales \(ICSO\)](#), Universidad Diego Portales, and funded by the Institute for Money, Technology and Financial Inclusion at the University of California, Irvine. Text in Spanish originally posted at the blog [Estudios de la Economía](#). Translated by [Taylor Nelms](#), with assistance from [Smoki Musaraj](#).

<http://blog.imtffi.uci.edu/2012/11/the-economy-of-quota-financial.html>

Project Page:

Year: 2011

The Financial Ecologies and Circuits of Commerce of Retail Credit Cards in Santiago de Chile

<http://www.imtffi.uci.edu/research/2011/ossandon.php>

Blog Post 5

This post by Sibel Kusimba was a preliminary report on the findings of her research, featured in “Verbal Interviews,” Case study 2. Kusimba uses an ethnographic writing style to present her data. It is a great example of “telling a story” with data in the presentation of findings. This approach for explaining data could be essential to disseminating findings to various audiences (stakeholders, research participants, and policy makers). It also illustrates how qualitative methods like ethnography or interview research are not just a method of data collection but a particular form of communicating and writing about the fieldwork itself.

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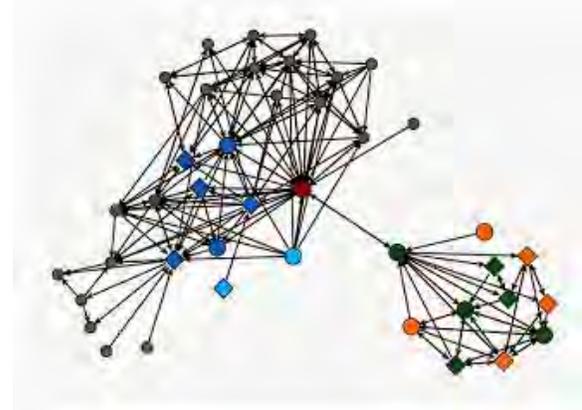
Grandmothers as Mobile Money Brokers in Kenya

By Sibel Kusimba based on [her IMTEFI-funded research](#)

In Kenya the use of mobile money sending systems has become a part of daily life. In 2012 my research team and I used semi-structured interviews to collect information on the connections forged by sending and receiving mobile money. From this information we created social network maps which reveal the paths of mobile money that circulate in families and show the connections of love, reciprocity, and obligation among members.

The social network maps show that women have various positions of advantage – what sociologist Pierre Bourdieu called social capital. Women often have many connections, sending and receiving money from siblings, children and grandchildren this helps make matrilineal kinship ties important in social network graphs. Finally, women are often brokers – connecting groups or “cliques” of others who would not otherwise be connected.

Figure 1 shows mobile money flows among a family living in the rural hamlet of Naitiri, Nairobi, and Chicago. The two main groups in Figure 1 are the children of a pair of sisters. A 67-year old farmer I will call Ruth (red circle) receives remittances from many of her eight children and 44 grandchildren, in turn circulating them back to her children but also brokering these resources with her deceased sister’s oldest daughter (green circle), who in turn sends and receives remittances with her siblings (also in green) and their children (in yellow). Ruth’s network also receives international remittances from the United States from one son and one daughter (light blue).



Writing in the July 2013 issue of *American Anthropologist*, Matthew Peeples and W. Randall Haas review theories of brokerage. The “individualist” model associated with

Burt's classic study assumes brokerage is a position of advantage that implies control over flows from one group to another. | The alternative "collectivist" theory argues that brokerage can be an ambivalent, risky or disadvantageous position and this can be more appropriate in settings where group or collective interests are valued more highly than those of individuals. Where the interests of the group in general are more valued, individuals will in fact use their broker position to close the "structural hole" and create more ties. These cultural settings may value collective interests- the trust or frequent contact allowed by the dense network- above those of individuals.

There may be aspects of both individualist and collectivist approaches to brokerage in Kenyan women's use of mobile money services. In another example, Sister Lucida is a 47-year old nun and student in Chicago who sends about \$300.00 a month to her mother in Homa Bay County, Western Kenya. Sister Lucida is too busy to hear and assess numerous requests for school fees and business investments from her relatives and allows her mother, a widow, to use the money she sends as she sees fit to help the family. After her father died, Sister Lucida explained that her mother became vulnerable among her in-laws, who chased her away from her home and stole her dishes and home furnishings. Sister Lucida and her siblings built and furnished her a new home on land they purchased that is the envy of the village. Sister Lucida sends her money for "upkeep," and is aware that the money ends up helping others in the family as her mother sees fit. Both she and her mother enjoy her status as a mother of a child in America.

As a broker, the Naitiri grandmother Ruth has used her influence in the family to fill the structural hole and further the connections between her children and her sister's children. The children of Ruth and her deceased sister have created a family association to collect school fees for the children and grandchildren of this pair of

sisters. At the deceased sister's funeral (often a time when social groups and generations reconstitute themselves, and when discord is displayed and assuaged), the children of these two women, who live in Naitiri, Kimilili, Chicago, and Nairobi, discussed the high cost of education. They then formed a credit and savings group in which each of them agreed to contribute 1000 shillings a month to a common savings account from which school fees would be paid on a rotating basis. The members meet once a month for a meal, where they also contribute 1000 Ksh. each towards a banked fund for school fees. Mobile money services are used by some at the meeting to send mobile money to the treasurer - from Chicago, a daughter uses Western Union.

In many families, siblings and other close relatives use mobile money to contribute regularly to informal savings or insurance plans in anticipation of funerals, weddings, medical care and educational fees. Matrilineal flows of mobile money often give mothers and grandmothers the potential to be brokers; but often women use these positions to recirculate funds, and create new, close connections of benefit to the group as a whole.

Dense networks may also reflect the limited social prestige and authority of mothers and grandmothers who, on maps of mobile money, are so central in collecting remittances. Several months after my field research in the summer of 2012, Ruth was hospitalized with typhoid. Her son in Chicago told me that her children in Kenya had been unable to raise the 40,000 Kenya shillings (about \$600.00) necessary for her release. Ruth continued to accumulate a bill for two weeks after her treatment while she waited to be let go from the hospital; her son and daughter in Chicago had refused to pay the bill, arguing that the large number of siblings in Kenya should raise the money by contributing amongst themselves. As the impasse continued, Ruth called her oldest son in Nairobi, and

during their heated conversation she told him that the family's economic security was in large part a result of the remittances from America. He responded by telling her to henceforth inform her Chicago children of her needs. After another week, her Chicago daughter sent the money, and contact between the siblings was discontinued for several weeks as hard feelings were nursed.

Dense networks of mobile money result from strategies that value reciprocity, communication and trust. Reciprocity and closure are the most valued forms of social capital in the mobile money networks of Kenyans, and these often leave individuals, even brokers, unable to accumulate the resources they need. A request cannot be denied; instead one's phone must be shut off or "lost" to avoid pressure for remittances. In a working paper for IMTFI, we examined how gender is reflected in mobile money networks in matrilineal ties, in the centrality of mothers and grandmothers, in the strong patterns of reciprocity that make receivers also senders, and in polygynous families where money is from those with resources to those without: from men to women. Gendered flows of mobile money provide a safety net and reduce risk, but often the resources sent are not enough, or cannot be held on to long enough, to prevent a mother from languishing in the hospital while her children squabble over the bill. Mobile money may simply provide a new technological means through which women cope in societies where they are marginalized from resources and wealth: by relying on their children, siblings, and others in their social network for the emergencies and needs of daily life.

Read Sibel Kusimba's full working paper, "[Social Networks of Mobile Money in Kenya](#)".

<http://blog.imtfi.uci.edu/2013/11/grandmothers-as-mobile-money-brokers-in.html>

Project Page:

Year: 2012

Mobile Kin and Mobile Money: The Anthropology of International Remittances in Kenya

<http://www.imtfi.uci.edu/research/2012/kusimba.php>

Blog Post 6

What happens when the separation of control and treatment groups in a randomized control trial is complicated by developments in the field? In this preliminary analysis of study results from an experimental project in Tanzania, the researchers describe how they were able to problem-solve in their analysis when marketing visits were not targeted as planned in their research design. The researchers show how interview techniques, social network analysis, and marketing surveys can be effectively combined within an RCT experimental design to establish the impact of mobile accounts on obligations within social networks. They illustrate some of the challenges of working with research partners in implementing the research as designed, but also the ways in which the combination of different methods and data can still yield meaningful results despite some minor setbacks. See the toolkit entry on Experiments for further background on experimental research design.

Originally published February 1, 2016

Mobile Money Uptake, Savings and Social Networks in Tanzania: A Lesson in Methods

By [Alfredo Burlando](#), [Cynthia Kinnan](#), [Silvia Prina](#)

When we decided to work on mobile savings in Tanzania, we had an initial understanding of the value of formal savings from the economics literature. We knew that savings accounts — from banks or mobile money operators — were becoming increasingly common in many unbanked areas of the world, and that adopters derived some important benefits from their accounts (Dupas and Robinson 2013; Prina 2015). What was less clear, and became the focus of our work, was the extent to which savings accounts generate social benefits (or costs). In particular, we became interested in measuring the extent to which savings accounts generate “network spillovers”— that is, impose benefits or costs on the adopters’ social network. The questions we posed to ourselves were: Do savings spillovers exist? Are they positive? Negative? Or both? Who gains and who loses? Finally, does savings generated through mobile money accounts lead to such spillovers?

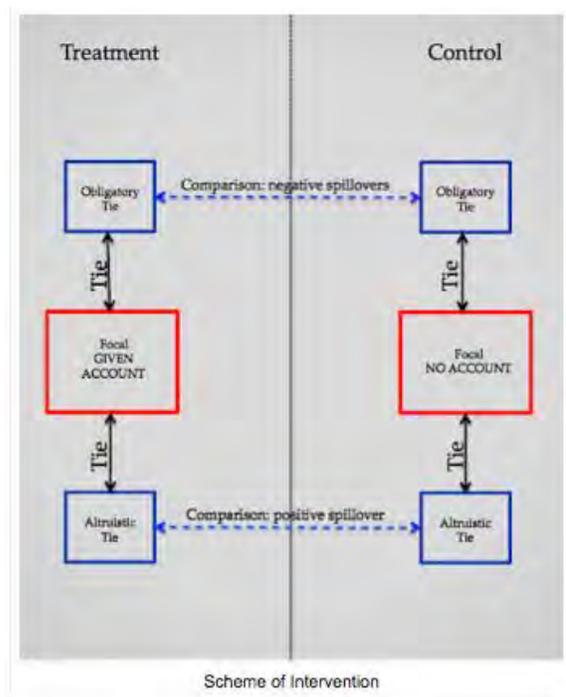


We have several reasons to believe that spillovers from savings exist and have important policy implications. Conceptually, positive spillovers may arise because savings access appears to raise the incomes of adopters, and a long line of economic research indicates that income gains may be shared among social networks.

Mobile money facilitates transfers, and therefore could also facilitate this type of spillover. The case for negative spillovers is more nuanced, but also plausible. Existing economic theory indicates that savings could encourage “shielding” cash from social networks. In practice, we have evidence from sub-Saharan Africa that households appear to attempt to avoid “kin taxes,” (see Baland et al. 2011; Dupas and Robinson 2013; Jakiela and Ozier 2012) and savings accounts may play a role in this avoidance. Given this premise, we hypothesize that different members of a social network may experience different effects. “Altruistic” ties (those characterized by “I want to share”) may experience positive benefits while “obligatory” ties (characterized by “I have to share”) may experience negative effects). If obligatory ties tend to be poorer to start with, inequality may widen and, in turn, inequality may aggravate negative effects through a vicious cycle. Once we decided on the hypothesis, we set on creating a randomized control trial that would allow us to generate, measure and ultimately study these spillover effects. At the time of writing this blog, we have completed all aspects of the trial and are working on the analysis.

Our intervention: Zantel’s EZY-Pesa in Tanzania

In our research, we distributed mobile savings accounts to approximately 1,500 participants in 33 rural and peri-urban areas of Zanzibar (Tanzania), and then studied the effects of adoption of these accounts on the adopters’ social networks through follow-up interviews. This work was done in partnership with Zantel, Zanzibar’s leading mobile phone operator whose mobile money product, called EZY-Pesa, allows deposits and withdrawals through local retailers. At the start of our study, this product was not widespread outside Zanzibar Town, and Zantel agreed to implement a marketing campaign tied to the study.



Our work began in September of 2013. Our research partners in Tanzania advertised a community meeting where a study tied to savings accounts was carried out. We then surveyed those individuals who showed up to the meeting and had expressed interest in opening a mobile money account. We collected baseline data on their income, occupation, and other socioeconomic markers. In addition, we collected information about their “key network partners”: financial partners, friends, advice-givers, etc. The key partners were ranked by respondent on the basis of questions such as “Imagine you got a surprise payment of Tsh 100,000 (~\$65). Who would you most want to keep this secret from? Who least?” This way, we were able to identify other people in the community who were likely to be either an “altruistic” tie, or an “obligatory” tie.

Following the interviews, we coordinated a mass marketing campaign with Zantel in October through

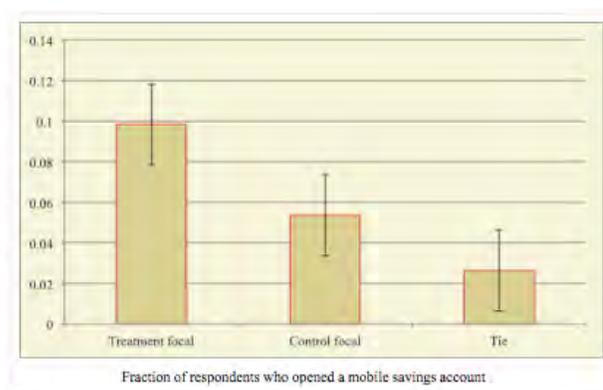
December 2013. We randomly assigned some of our baseline respondents (“focal respondents”) to receive help signing up for EZY-Pesa. The marketing visit included a one-on-one explanation on how to operate EZY-Pesa to accumulate savings. Importantly, marketers were not allowed to talk about the transfer features of EZY-Pesa. Finally, to encourage usage, we also made a Tsh 2000 (~\$1.25) initial deposit in their new EZY-Pesa accounts. The remaining households were randomly assigned to receive Tsh 2000 in cash, no marketing visit, and no sign-up assistance.

In summer 2014, we identified baseline respondents (“focal households”) plus one tie we deemed to be “altruistic” and one tie we deemed to be “obligatory”. Ultimately, we were able to gather information from a large number of participants—over 1,500 focal individuals and 2,500 of their social ties. In this endline survey we collected information on demographics, informal transfers, and demand for savings. Respondents were also asked whether they received a marketing visit in October through November from Zantel, and whether they opened a mobile account. We used the answers to these two questions to determine how well the marketing intervention went.

Stumbling blocks on the road to analysis

Marketers were instructed to enroll in EZY-Pesa only those focal individuals who were randomly assigned to the treatment. Unfortunately, the marketing visits were not targeted as agreed, complicating our efforts to study their causal impacts. We found that only one quarter of treatment individuals reported being visited by Zantel representatives; moreover, one fifth of focal individuals assigned to the control reported receiving a visit. (A much smaller fraction, 13%, of ties reported a visit from marketers). Since there is not much difference in the likelihood that a focal person received a marketing visit, we could not use standard methods of analysis for experiments.

Despite this setback, we find that the marketing visits were effective at signing up new users: 40% of visited treatment individuals opened an account. This is higher than take-up rates of microfinance (e.g. Banerjee et al. 2015). Of those who signed up, 52% used the account “actively” (two or more times), a figure similar to findings for traditional savings accounts in Kenya (Dupas and Robinson 2013).



Fortunately, a much smaller proportion of visited control individuals (24%) and of visited ties (19%) opened a savings account. We interpret this to mean that many Zantel marketers indeed declined to sign up those not formally assigned to the treatment. Because of this, we do observe a statistically significant (albeit small—only 5%) difference between the fraction of all treatment individuals opening an account and the rest of our respondents.

The road ahead

Just because marketers did not follow the instructions provided does not mean we cannot uncover the spillover effects. By pairing each focal individual who received a marketing visit with another focal individual who was skipped by the marketers but has very similar characteristics, we can use “matching” techniques to

study both positive and negative spillovers on the paired ties.

While we now working through this analysis having derived certain lessons from our intervention. First, (mobile) savings are not for everyone: of a group that expressed interest in EZY-Pesa, 40% of those who received a marketing visit signed up for an account and among these only half of those who signed up used the account actively. While there is an active discussion on the importance of reducing fees and entry costs, our study suggests that reducing those costs to zero is not enough. Costs are not the only (or perhaps even the main!) barrier to adoption.

Second, we think that our partnership with Zantel had an important benefit: having done almost 700 marketing visits was certainly a big accomplishment, and it increased “external validity” (and hence the scalability of the intervention). On the other hand, the scale did come at a cost: there was noncompliance in the way marketers approached local communities, and this reduces the study’s “internal validity” (i.e. ability to estimate causal impacts without additional assumptions). It will be interesting to see if future studies will emerge that can address the latter.

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<http://blog.imtfi.uci.edu/2016/02/mobile-money-uptake-savings-and-social.html>

Project Page:

Year: 2013

How does Mobile Money affect adopters' social networks?

http://www.imtfi.uci.edu/research/2013/burlando_kinnan_prina.php

Blog Post 7

This project also serves as an example of experimental research design (See the toolkit section, Experiments). It nicely illustrates a “natural experiment,” where a product has already been introduced but certain cause-and-effect relationships can be tested using existing data sets. The research described here generated new research questions and hypotheses about people’s motivations behind account use, levels of trust and distrust, and the relation between traditional and new savings techniques with the account. These new questions could be further examined, for instance, using ethnographic, interview and financial diaries methods.

Originally published March 28, 2016

Using the ATM Debit Card to Build Trust and Savings: A Study through Mexico's Oportunidades

by [Enrique Seira](#), from the study "[Paying Conditional Cash Transfer Programs in Bank Accounts](#)"

Trust is an essential element of economic transactions. This is especially true for savings where transactions take the form of a promise to future returns. Unfortunately trust in financial institutions appears low across the world and even more so among the poor and less educated. In Mexico, for instance, 25 percent of those with primary school education admitted to having "no trust at all" in banks, while 18 percent of those with more than primary school education expressed some trust in the banks (Gallup World Values Survey). This is not entirely inexplicable, given

that in the last 15 years, there have probably been hundreds of frauds in Mexico which led poor savers to lose all the money they deposited in financial institutions. Researchers have also noted that poorer clients who received assistance in surmounting the initial costs of opening bank accounts often ended up using the account to merely withdraw money from transfers and let the account remain idle the rest of the time. Along with transaction costs, low trust frequently figures as the main reason cited by the poor for not using savings account. Overall, this state of affairs might help us to explain why there is little savings in formal accounts.

In our study we were interested in finding out whether ATM debit cards and mobile banking could potentially alleviate this problem since these technologies potentially lower the cost of monitoring movements in the account and simultaneously increase convenience and access to savings. Ideally, this could be tested using a randomized experiment where we award savings accounts with and without ATM cards randomly. Unfortunately, such a randomized experiment does not yet exist in the given context. Thus, in our study, we look at the effect of giving debit cards to the beneficiaries of a Mexican state conditional cash transfer program *Progresar/Oportunidades* (now *Prospera*). The beneficiaries had already received their transfer at a government development bank Bansefi but had not been given a debit/ATM debit card connected to the account. For the study, we have used account level information on more than 300,000 accounts some of which received an ATM debit cards in a staggered fashion.



Photo: Will Kay, Flickr, Creative Commons
<http://bit.ly/1OVvdtK>

At the beginning of the research, we were intrigued in part, by the stories of *Oportunidades* beneficiaries who complained about money disappearing from their account. We found that this was due to the substantial fees they were incurring by frequently checking their account balances. This was so particularly in the beginning when they did not have any trust in the banks and resorted to making sure that their money was there by checking their accounts several times in a single day. Since there was a transaction cost involved in the process, the beneficiaries lost a substantial amount of their funds in this way. We focused on the increase in the savings account of the group that had received the debit cards. For purposes of comparison, we also had a control group that had not received any debit cards as a part of the program. For analysis, we undertook a differences-in-differences empirical design to approximate the causal effect of receiving the card on savings in the account.

As mentioned in the beginning, we found that when they first got the debit card, customers checked their saving balance frequently, but the frequency of this checking declined over time. Most notably, beneficiaries with more than 6 months with the card

checked 57 percent less frequently per bimester. This evidence strongly suggests that initial use of ATM debit cards to frequently check and monitor savings account helps to build up trust. Additionally, the increase in saving was gradual and coincided with the increase in directly elicited trust in the bank account and was not related to the learning curve for the debit card use. We found that in the groups using the debit cards, the savings increased dramatically, almost tripling in a span of 2 years after receiving the ATM card vis-à-vis the control group (without the ATM card). We noted that the increase in trust was contemporaneous with increases in savings amount in the bank account.

In addition, the use of a consumption-income survey showed that the increase in savings in the account comes from new savings and not just from savings shifting. We found that although income did not change, consumption decreased after getting the ATM card. One interpretation of this finding is that the account allows for some commitment to saving and avoidance of "temptation goods" like high sugar foods that would otherwise be consumed. In our final report we lay out some alternative explanations such as mechanical savings where saving increases related to more frequent but lower amount withdrawals, and differential changes due to changes in the amount of the *Oportunidades* transfer.

All in all these findings indicate good news. Trust and how to increase trust has not received enough attention in the academic literature. Our results suggest that an existing and simple technology – namely the debit card could increase trust, account use, and savings. Furthermore our findings show that in contexts such as the one examined in this study, the experiment can be easily scaled up. Increasingly, the world over, tens of millions of poor households in dozens of countries currently receive cash transfer programs, more and more into bank accounts. Given the possible benefits,

providing ATM cards for these accounts appears to be a worthwhile measure worth ensuring.

The final report of the study on how the ATM card has an effect on trust, savings, and the use of formal savings accounts can be found [here](#).

<http://blog.imtfi.uci.edu/2016/03/using-atm-debit-card-to-build-trust-and.html>

Project Page:

Year: 2014

**Paying Conditional Cash Transfer Programs
in Bank Accounts**

http://www.imtfi.uci.edu/research/2014/seira_aguilar.php

Blog Post 8

In this post we see how study design can play close attention to generational and gender differences in mobile money use. Researchers interviewed and surveyed Tigo money users, service point attendants, and professional experts. We include samples of their research instruments in part II of the appendix as examples of how to design research instruments for specific target populations included in a study, as well as the informed consent process. The researchers conclude their post by noting a regulatory change that occurred after the completion of their study. Legal and regulatory changes can have important consequences for studies of new consumer finance products like mobile money. In the context of this study, new research might track how the mobile operator is adapting to an altered competitive environment, or how users negotiate changing fee structures.

Originally published May 4, 2015

Hand Held Wealth?: A Case of Tigo Money in Bolivia

By IMTFI Researchers [Maria Isabel Balderrama](#) and [Oscar Rocabado](#)



Advertisement for Tigo Money on the side of a Bolivian bus (Photo by the authors)

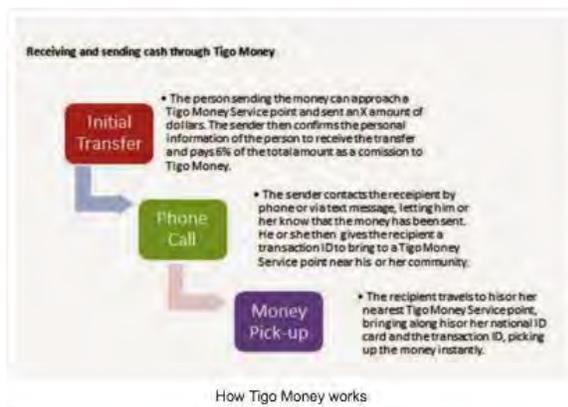
For this research project, we chose to focus on the acceptance of the mobile money service "Tigo Money" by the rural population of Bolivia and the effects of this new technology on the development of rural areas. 40% of the Bolivian rural population lives in extreme poverty on less than US\$1.25 per day. However, despite the country's poor infrastructure and dispersed population, an estimated 98% of Bolivians have access to mobile technology. It may be for this reason that, in January of 2013, Tigo--a brand of the international telecommunications and media company Millicom--launched its nationwide mobile money platform Tigo Money in order to allow for further "[financial inclusion that will allow overcoming of barriers and distance between people, especially among rural populations.](#)"

Our research area consists of two municipalities--Urmiri and Chayanta--located in the northern area of Potosi, one of Bolivia's nine departments. The municipalities chosen have two of the highest indices of poverty in all of Bolivia and most of their economic activity is derived from subsistence agriculture and/or livestock. These two municipalities are also fairly difficult to access: The inhabitants of Urmiri must travel one hour and forty-five minutes by bus through very rough terrain to reach Potosi, the nearest urban center, while the inhabitants of Chayanta are thirty minutes away by bus from Llalagua, a medium-sized

mining town. We were able to gather information from these two communities regarding their use of Tigo Money through participant observation and by conducting over 500 surveys and 69 interviews with its inhabitants over a period of four weeks. We also spoke to Tigo Money Service Point attendants and professional experts in the areas of communication and technology in Bolivia.

Tigo Money: How does it work?

What makes Tigo Money appealing to the Bolivian rural population is that its users do not have to be formally affiliated or fill out any paperwork, something that requires a great deal of time and effort. Tigo Money only requires its clients to present their national identification cards and visit one of Tigo Money's 1,174 service points, 39% of which are located in rural areas throughout the country.



Our results show that 20% of respondents in the research areas (24% in Urmiri and 17% in Chayanta, respectively) utilize Tigo Money to receive money. There was only one recorded case of a user utilizing Tigo Money to both send and receive, but all of the other respondents in our study reported having never used the service to send money to anyone, anywhere in Bolivia. Of these, 100% use the service to receive money.

However, Bolivian Tigo Money users face a big hurdle in that Tigo's mobile service coverage does not reach the most rural areas of Bolivia, including Urmiri and Chayanta. The government-owned telecommunications company ENTEL, on the other hand, is mandated by General Law 164 (2011) to provide coverage to all areas of Bolivia, both urban and rural. The cost of a phone call via ENTEL is US\$0.17 per minute and the cost of a text message is US\$0.02. For this reason, the Tigo Money users in our study almost always utilize ENTEL as a carrier when engaging in Tigo Money transactions rather than Tigo's own mobile service. Family members located in the urban centers of Bolivia let their relatives in Urmiri and Chayanta know about the money transaction through a phone call or a text message sent to their ENTEL cell phones, and then the recipient travels to his or her nearest Tigo Money point and picks up the money.

As a result, Tigo describes Tigo Money as “[a mobile payment system that allows \[customers\] to transfer money in a simple and secure way through a mobile wallet that is activated through a cell phone.](#)” It is via this mobile wallet that users may transfer mobile money to other mobile wallets and then convert the electronic money into physical and legal tender, but in reality, users in rural areas see Tigo Money as mobile money service used primarily for receiving informal cash transfers.

Women and Migration

We found that most of the recipients of payments using Tigo Money are women. Why? The data show that there is a relationship between Tigo Money, migration, and care networks. In fact, we found that there were very few women between the ages of 30 and 39 living in the research area, primarily due to the internal migration flows from rural to urban centers. If these female migrants to urban centers are the ones to

send money, who receives it? Based on interviews and observations, we concluded that the recipients of this money are mainly women older than 39, namely grandmothers left caring for the children of migrant parents.



Women in rural Potosi (Photo by the authors)

How have mobile money flows improved the lives of the people of Northern Potosi? In a number of ways:

- 1) *An improvement in the eating habits* of the recipient households through the diversification of their daily diet related to having more income to spend on food other than the few staple foods locally available and grown.
- 2) *An improvement in education.* A significant number of interviewees pointed out that they use the money received through Tigo Money to pay for college. Others also pointed out that they are saving the money to send their children to school.
- 3) *Increased short and long term investing.* In the short term, commercial activities such as purchasing and reselling canned goods, pasta, flour, sugar, and others have been incorporated into the economic activities of the communities' inhabitants. In the long term, the purchase of agricultural technology such as sprinkler systems and greenhouses aims to improve agricultural productivity and set a goal beyond subsistence farming.

28 of the 68 Tigo Money users whom we interviewed for this study indicated that their spending habits improved since they began using Tigo Money:

“Now, with the money my father sends we buy things for the family” (Female, 18)

“I can spend in studies for my children thanks to the money I receive” (Male, 35)

And 23 indicated that they felt that their saving habits improved:

“I now save for when something really bad happens” (Female, 49)

“I save more money for when I go to Potosi [City]” (Male, 35)

Tigo Money vs. Financial Funds and Banks

87% of all Tigo Money users surveyed thought that Tigo Money's fees were too high, with one respondent even suggesting that “the government should provide this service for free.” So now we must ask the question: Why Tigo Money and not formal banking? The research suggests that it might have to do with rural inhabitants' overall distrust of formal banking coupled with the lack of familiarity with new financial rules and regulations. Tigo Money launched a very aggressive marketing campaign that has reached, with its flyers and advertising posters, even the most remote communities of the Altiplano region, something that traditional banks have failed to do.

While we were in the midst of doing our research, Law 393: Financial Services Law was put into effect in 2014. The law specifies that formal banking institutions must make all of their services universally acceptable. Consequently, banks must now be free for customers to use without incurring any additional maintenance

fees. Although clients need a minimum of US\$8 to open an account with PRODEM--the bank with the most presence in rural areas--no minimum balance is needed to maintain an account. These changes mean that PRODEM, and similar formal banking entities, are just as convenient, if not better and perhaps cheaper than Tigo Money, as Tigo Money requires users to pay a fee for each transaction. It will be interesting to see how this new law affects the mobile money landscape in Bolivia in the years to come.

Read more in Balderrama and Rocabado's [Final Report](#)

Project Page:

Year 2014

**Hand Held Wealth? Mobile Money & Food
Production in Rural Potosi**

http://www.imtfi.uci.edu/research/2014/balderrama_rocabado.php

Appendix II. Sample Research Instruments

From the project, “Hand Held Wealth? Mobile Money and Food Production in rural Potosi” by M. Isabel Balderrama and Oscar Rocabado, IMTFI Final Report, June 1, 2015

<http://www.imtfti.uci.edu/files/docs/2015/Balderrama%20and%20Rocabado%20Final%20Report.pdf>

Survey and Interview Templates

QUESTIONNAIRE: TIGO MONEY USERS

DATE _____

LOCATION _____

NAME OF QUESTIONNAIRE-TAKER _____

Mobile Money & Food Production in Rural Potosi

Hello! My name is _____, and I would like to ask you to participate in a research project about how you save, spend and store your money. This research is being supported by the University of California in Irvine, California, in the United States of America. The research is being conducted by Isabel Balderrama. I am from UMSA’S CIDES in La Paz. [Hand subject own business card, with UC Irvine IRB address, phone and email written on the back]. You may also contact the University of California if you have any questions about this research [Show back of card].

I would like to ask you a few questions from this questionnaire about the way you utilize, or the reason why you do not utilize Tigo Money, and if this service has been useful or not in bettering your quality of life. It will not take more than 15 to 20 minutes of your time. The only risk of completing this questionnaire is the possibility that if someone else gets a copy of it, they might learn about your saving and spending habits, and how you utilize Tigo Money. But I will not collect any information that identifies you by name, and we will make sure that no one has access to this information other than me and the researchers I am working with.

Your participation in this research is totally voluntary, and you can refuse to participate if you wish. If you do not want to participate, please let me know and I will leave. You can also stop the questionnaire at any time, or refuse to answer any question as we go along. May I also photograph or take a videotape of you? If so, may I use these images if I present my research to other people in a lecture presentation or published book or article? Please sign the following photo/video release form.

We hope that this research will help us better understand how people save, store and spend money in your community. May I ask you these questions on this questionnaire?

YES	NO
------------	-----------

START OF SURVEY

1. Respondent's Gender	MALE	FEMALE
2. Age		
3. Highest education level reached		
4. Primary Occupation		
5. Estimated monthly income		
6. Number of family members in		

household?		
6. Do you have a TIGO phone line?	YES	NO
7. Do you use TIGO Money?	YES	NO
8. Why or Why Not?		

If respondent answers “NO” this is the end of the survey. If he or she answers “YES” then proceed to question 8

9. Do you send or receive money through TIGO Money?	SEND	RECEIVE	BOTH
---	------	---------	------

*If respondent answers “SEND” fill out section “A.” If he or she answers “RECEIVE” then fill out section “B.” If “BOTH” fill out **both** sections.*

SECTION A

10. Where do you send the money?	RURAL LOCATION		URBAN LOCATION	
11. Who do you send the money to?	FAMILY MEMBER		FRIEND	OTHER
12. Occupation of the recipient				
13. How often do you send money?				
14. What use does the recipient give the money, generally?	DON'T KNOW			
15. Amount you usually send?				

SECTION B

16. Where do you receive the money from?	RURAL LOCATION		URBAN LOCATION	
17. Who do you receive the money from?	FAMILY MEMBER		FRIEND	OTHER
18. Occupation of the sender				
19. How often do you receive money?				
20. What use do you generally give the money?				
21. Amount you usually receive?				

SECTION C

22. Are you happy with the services TIGO Money provides?	YES	NO
23. Why or why not?		

24. Are you content with the costs related to using TIGO Money?	YES	NO
25. Do you have any other comments or observations?		

INTERVIEWS: TIGO MONEY USERS

DATE _____
 LOCATION _____
 NAME OF INTERVIEWER _____

Mobile Money & Food Production in Rural Potosi

Hello! My name is _____, and I would like to ask you to participate in a research project about TIGO Money usage in Rural Potosi. This research is being supported by the University of California in Irvine, California, in the United States of America. The research is being conducted by Isabel Balderrama. I am from UMSA'S CIDES in La Paz. [Hand subject own business card, with UC Irvine IRB address, phone and email written on the back]. You may also contact the University of California if you have any questions about this research [Show back of card].

I would like to ask you a few questions from this questionnaire about Tigo Money usage, It will not take more than one hours of your time, probably less.

Your participation in this research is totally voluntary, and you can refuse to participate if you wish. If you do not want to participate, please let me know and I will leave. You can also stop the questionnaire at any time, or refuse to answer any question as we go along.

May I also photograph or take a videotape of you? If so, may I use these images if I present my research to other people in a lecture presentation or published book or article? Please sign the following photo/video release form.

We hope that this research will help us better understand how people save, store and spend money in your community. May I ask you these questions on this questionnaire?

YES	NO
-----	----

May I also digitally record this interview?

YES	NO
-----	----

START OF INTERVIEW

SECTION A – General Information

1. Respondent's Gender	MALE	FEMALE
2. Age		
3. Highest education level reached		
4. Main occupation		
5. Estimated monthly income		

6. Marital Status	
--------------------------	--

SECCION B – TIGO Money Use

7. How did you first hear about TIGO Money?

8. What was the main reason you started using TIGO Money?

9. Did you experience any difficulties accessing the services provided by TIGO Money?

YES

NO

9a. If yes, please explain.

10. Since you began using TIGO Money, your SPENDING habits...

IMPROVED

GOT
WORST

STAYED
THE SAME

10a. Please explain.

11. Since you began using TIGO Money, your SAVING habits...

IMPROVED

GOT
WORST

STAYED
THE SAME

11a. Please explain.

12. Since you began using TIGO Money, your levels of financial INVESTMENT...

INCREASED

DECREASE
D

NO
CHANGE

12a. Please explain.

13. Who makes the majority of financial decisions in your household?

14. Have you recommended TIGO Money to any of your acquaintances, friends or family members?

YES

NO

15. Do you have any final comments?

INTERVIEWS KEY INFORMANTS: TIGO MONEY EMPLOYEES

DATE _____

LOCATION _____

NAME OF INTERVIEWER _____

Mobile Money & Food Production in Rural Potosi

Hello! My name is _____, and I would like to ask you to participate in a research project about TIGO Money usage in Rural Potosi. This research is being supported by the University of California in Irvine, California, in the United States of America. The research is being conducted by Isabel Balderrama. I am from UMSA'S CIDES in La Paz. [Hand subject own business card, with UC Irvine IRB address, phone and email written on the back]. You may also contact the University of California if you have any questions about this research [Show back of card].

I would like to ask you a few questions from this questionnaire about Tigo Money usage, It will not take more than one hours of your time, probably less.

Your participation in this research is totally voluntary, and you can refuse to participate if you wish. If you do not want to participate, please let me know and I will leave. You can also stop the questionnaire at any time, or refuse to answer any question as we go along.

May I also photograph or take a videotape of you? If so, may I use these images if I present my research to other people in a lecture presentation or published book or article? Please sign the following photo/video release form.

We hope that this research will help us better understand how people save, store and spend money in your community. May I ask you these questions on this questionnaire?

YES	NO
-----	----

May I also digitally record this interview?

YES	NO
-----	----

START OF INTERVIEW

SECTION A – General Information

1. Respondent's Gender	MALE	FEMALE
2. Age		
3. Highest education level reached		
4. Position at TIGO Money		
5. Estimated monthly income		

SECTION B – QUESTIONS ABOUT TIGO MONEY USAGE

6. About how many people utilize Tigo Money?	
7. How much money gets transferred per day on average?	

8. Do you assist your clients by teaching them how to utilize TIGO Money's services and answering any questions they may have?				
9. On average, do you usually have enough cash on hand to be able to make the payments out to customers in a timely manner?				
10. Can you tell me of any difficulties that you are aware of that customers have run into while trying to access TIGO Money's services?				
11. What are the main advantages to using TIGO Money, from your point of view?				
12. From your point of view, are most transactions...	URBAN – URBAN	RURAL – RURAL	RURAL – URBAN	URBAN – RURAL
13. Is coverage adequate in rural areas where TIGO Money is utilized?	YES		NO	
13a. If not, what, if anything, is being done to correct this situation that you are aware of?				
14. Has TIGO Money usage grown in the past six months? By how much?				
15. Do you think TIGO Money is accessible to people who are low-income earners?				
16. What is your opinion on the transactions costs related with the usage of TIGO Money?				
17. Do you think, generally speaking, that TIGO Money is easy for people to use?				

18. Why do you think people choose TIGO Money over other money transfer services?

19. Do you have any other comments?

INTERVIEWS KEY INFORMANTS: ACADEMIC EXPERTS

DATE _____

LOCATION _____

NAME OF INTERVIEWER _____

Mobile Money & Food Production in Rural Potosi

Hello! My name is _____, and I would like to ask you to participate in a research project about TIGO Money usage in Rural Potosi. This research is being supported by the University of California in Irvine, California, in the United States of America. The research is being conducted by Isabel Balderrama. I am from UMSA'S CIDES in La Paz. [Hand subject own business card, with UC Irvine IRB address, phone and email written on the back]. You may also contact the University of California if you have any questions about this research [Show back of card].

I would like to ask you a few questions from this questionnaire about Tigo Money usage, It will not take more than one hours of your time, probably less.

Your participation in this research is totally voluntary, and you can refuse to participate if you wish. If you do not want to participate, please let me know and I will leave. You can also stop the questionnaire at any time, or refuse to answer any question as we go along.

May I also photograph or take a videotape of you? If so, may I use these images if I present my research to other people in a lecture presentation or published book or article? Please sign the following photo/video release form.

We hope that this research will help us better understand how people save, store and spend money in your community. May I ask you these questions on this questionnaire?

YES	NO
-----	----

May I also digitally record this interview?

YES	NO
-----	----

START OF INTERVIEW

SECTION A – General Information

1. Respondent's Gender	MALE	FEMALE
2. Name		
3. Age		
4. Position		

SECTION B – QUESTIONS ABOUT MOBILE TECHNOLOGIES IN RURAL LATIN AMERICA AND RURAL BOLIVIA

5. In your opinion, do you think the current socioeconomic and regulatory environment is conducive to the introduction and/or expansion of new mobile money technologies?

6. What impact do issues such as marketing, user education, literacy and cultural mistrust of formal financial services have on the uptake of mobile-money services in the rural Bolivia and in Latin America in general?

7. What is your general opinion on the importance of the adoption of new mobile banking services by low-income rural populations throughout Bolivia?

8. Do you think mobile-money services have or will gain much momentum in rural Bolivia, and, if so, what could be or is the catalyst/s that can stimulate growth?

9. What is your outlook for mobile-money services in rural Bolivia? In Latin America?

11. What are the main advantages to using TIGO Money, from your point of view?

19. Do you have any other comments and/or observations?

Timeframe of research activities

PROCEDURES CONDUCTED

- **August 4th, 2014:** Start of the research project; Initial team meeting
- **August 22 – August 29:** First visit to research areas; Initial meetings with key informants; Pilot interviews
- **August 24 & 27:** Team meeting with key informants to assign tasks for upcoming events; Suggestions on how to improve research tools based on the results of the pilot interviews
- **September 1st:** Second visit to research area: Chayanta
- **September 2 – September 7:** Quantitative and qualitative data collection on-site
- **September 5:** Team meeting to discuss observations
- **September 7:** Third visit to research area: Urmiri
- **September 8 – September 14:** Quantitative and qualitative data collection on-site
- **September 12:** Team meeting to discuss observations
- **October 6:** Fourth visit to research area: Chayanta
- **October 7 – October 12:** Quantitative and qualitative data collection on site
- **October 10:** Team meeting to discuss observations
- **October 12:** Fifth visit to research area: Urmiri
- **October 13 – October 20:** Quantitative and qualitative data collection on site
- **October 17:** Team meeting to discuss observations
- **October 22 – November 3:** Completion of Semi-annual Technical Report
- **November 4 – November 28:** Collection of interviews with, key informants and academic experts
- **October 22 – November 30:** Data analysis; preparation medium term report
- **December 1:** Fifth official team meeting to discuss progress on final report and prepare presentation for the IMTFI Conference in Irvine, CA
- **January 1, 2015 – May 31, 2015:** Data analysis, report writing
- **June 1, 2015:** Presentation Final Report; End of project

Activities	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Initial team meeting	■									
Development of research tools (Surveys & Interviews)	■									
Collection of interviews with key informants				■						
First visit to research areas/Initial meetings with key informants; pilot interviews	■									
Second visit to research area: Chayanta		■								
Quantitative and qualitative data collection on-site		■								
Third visit to research area: Urmiri			■							
Quantitative and qualitative data collection on-site			■							
Fourth visit to research area: Chayanta			■							
Quantitative and qualitative data collection on-site			■							
Fifth visit to research area: Urmiri			■							
Quantitative and qualitative data collection on-site			■							
Data analysis and completion of Semi-annual Technical Report				■	■					
Preparation of final report and project completion						■	■	■	■	■

Footnotes

1 The CFRM Project is funded by the Institute for Money, Technology, and Financial Inclusion and by the Canela Group. Erin B. Taylor and Gawain Lynch serve as project leads. Information can be found on the IMTFI's website, <http://www.imtffi.uci.edu/cfrmp>

2 *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research*, The National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, 1978, http://videocast.nih.gov/pdf/ohrp_appendix_belmont_report_vol_2.pdf

See also:

<http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html>

3 <http://oprs.usc.edu/review/typesofirb/>

4 "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, *Forum: Qualitative Social Research* 1(3), <http://www.qualitative-research.net/index.php/fqs/article/view/1024/2207>

5 "Snowball Recruitment—Active and Passive," Research Support, University of Sydney, http://sydney.edu.au/research_support/ethics/human/guidelines/snowballing.shtml

6 See: CITI Program <https://www.citiprogram.org/index.cfm?pageID=22>

7 See: NIH Human Subjects Protection Training <https://grants.nih.gov/grants/policy/hs/training.htm>

8 See WIRB Services <https://www.wirb.com/Pages/Default.aspx>

9 See CASRO Code of Standards and Ethics <http://www.casro.org/?page=TheCASROCode>

2014; See also: MRA Code of Marketing Research Standards

<http://www.marketingresearch.org/issues-policies/mra-code-marketing-research-standards> and "Ethical Considerations of Marketing Research," by Terry Masters, Houston Chronicle

<http://smallbusiness.chron.com/ethical-considerations-marketing-research-43621.html>

10 According to the AAA code of ethics, researchers must be open and honest about their work. It is unethical for researchers to engage in misleading or deceptive behavior to collect data, and does not comply with standards of informed consent of human subjects. (<http://ethics.aaanet.org/ethics-statement-2-be-open-and-honest-regarding-your-work/>) Alternatives to mystery shopping could include product testing and participant observation of enrollment, usage, and provider interactions with customers when researching new consumer finance products or services.

11 *Research Ethics and Integrity for Social Scientists: Beyond Regulatory Compliance* by Mark Israel, SAGE Publications, 2014.

12 <https://www.epicpeople.org/>

13 See, for example, "Loan Supply, Credit Markets and the Euro Area Financial Crisis" by Carlo Altavilla, Matthieu Darracq Paries and Giulio Nicoletti, European Central Bank, Working Paper No.1861, October 2015, <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1861.en.pdf>

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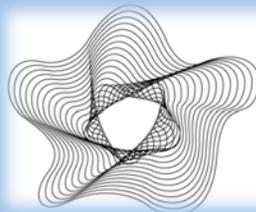
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