Maria Isabel Santana
University of Mannheim
L7, 3-5 Room 1.20
D-68161 Mannheim
Germany
☎ (+49) 151 4650 2137

Maria Isabel Santana, Department of Economics, University of Mannheim

National Bureau of Economic Research (NBER)
Household Finance Working Group

December 1, 2016

**Application**

Dear members of the hiring committee,

It is my pleasure to apply for the position as **Postdoctoral Fellow** at the National Bureau of Economic Research.

I am currently a PhD candidate in Economics at the University of Mannheim and expect to receive my degree in June 2017.

I am very pleased to hear about your job opening; the position is a great fit for my research and teaching interests. My research focuses on development and behavioral economics, as well as on social networks. I am interested in the behavioral aspects of the decision making process of people in developing countries, in particular when they face resource constraints while they make decisions. Please find attached a detailed description of my research and a current Curriculum Vitae.

My dissertation focuses on three topics, all related to experimental work. In my job market paper, we design a novel behavioral measure of trust in institutions. Further, relying on random variation, we investigate the effects of a change in trust levels on financial behavior.

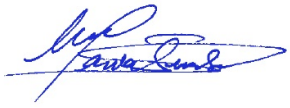
In my second paper, I investigate whether a financial training program leads to an increase in savings and whether the effects spill over to network members. In my third project, I analyze the role of contract nonperformance risk and ambiguity in insurance markets. Here, we extend probabilistic insurance models to allow for ambiguous contract nonperformance and loss probabilities and subsequently test the theoretical predictions experimentally.

The projects were implemented as lab-in-the-field and field experiments in the Philip-

pines. On all I served as the project manager in the field, gaining experience in designing and running the experiments, as well as preparing the supporting materials such as questionnaires and experiment protocols in the context of a developing country. In the analysis stage, I had a leading role in conducting the analyses and writing the papers.

I am available for interviews at the **AEA/ASSA Meeting in Chicago, January 6-8 2017** and at the **SAEe Meeting in Bilbao, December 15-17 2016** and would be delighted to talk to you in person. If you have any further questions, please do not hesitate to contact me. Thank you for your time and consideration.

Sincerely,



Maria Isabel Santana

encl: CV and Research Statement

# María Isabel Santana

*L7,3-5*
*Mannheim, Germany 68163*
*+49 (1514) 650 2137*
☎ *+49 (621) 181 3648*
✉ *msantana@mail.uni-mannheim.de*
*https://sites.google.com/site/maisabelsantana/*

## Education

2011– **PhD Candidate in Economics**, *University of Mannheim*, Mannheim, Germany.
Expected Completion Date: June 2017

2009–2011 **Master of Arts in Economics**, *Cornell University*, New York, USA.
(PhD Track)

2006–2007 **Master of Science in Economics**, *University of Essex*, Colchester, UK.
with Distinction

2001–2005 **Bachelor in Economics**, *Pontifícia Universidad Católica Madre y Maestra (PUCMM)*, Santo Domingo, Dominican Republic, *GPA – 3.7*.
Magna Cum Laude

## Research Fields

Primary Development Economics

Secondary Behavioral Economics, Social Networks

## References

Prof. Markus Frölich
Department of Economics
University of Mannheim
☎ +49 621 181 3647
✉ froelich@uni-mannheim.de

Prof. Michèle Tertilt
Department of Economics
University of Mannheim
☎ +49 621 181 1902
✉ tertilt@uni-mannheim.de

Prof. Henrik Orzen
Department of Economics
University of Mannheim
☎ +49 621 181 1890
✉ henrik.orzen@uni-mannheim.de

Prof. Katja Kaufmann
Department of Economics
University of Mannheim
☎ +49 621 181 1959
✉ kaufmann@vwl.uni-mannheim.de

## Working Papers

**Measuring trust in institutions: a lab-in-the-field study using time preference elicitation** (joint with Stefan Penczynski) Job Market Paper

**Financial education, social networks and the decision to save: Evidence from a field experiment in the Philippines**

**Contract nonperformance risk and ambiguity in insurance markets** (joint with Christian Biener, Martin Eling and Andreas Landmann)

## Teaching Experience

University of Mannheim

2016 Business Economics I, Business Economics II

2014 Macroeconomics A, Macroeconomics B

2012 Growth and Development

Cornell Univeristy

Summer 2011 Introductory Microeconomic Theory

Instituto Tecnológico de Santo Domingo (INTEC)

Summer 2008 Econometrics (Lecturer)

Universidad Católica de Santo Domingo (UCSD)

Fall 2008 Econometrics (Lecturer), Development Economics (Lecturer)

## Employment

2008–2009 Cabinet for the Coordination of Social Policies, Consultant for the Evaluation of Social Programs

2008–2009 Plenitud Foundation, Research Associate

2007–2008 Ministry of Economics, Planning and Development, Economic Consultant

2005–2006 Verizon Dominicana, Senior Analyst for the Business Intelligence Department

2003–2005 United Nations Development Program (UNDP), Junior Economist

## Presentations

2017 AFA Poster Session at the ASSA Meetings (scheduled)

2016 Inequality and Fairness of Political Reforms Conference (scheduled), PODER Summer school, IDEAS Summer School in Development Economics, Field Days: Experiments Outside the Lab – WZB (poster), Development Economics and Policy Conference-German Development Group (poster), University of Tilburg (ENTER program)

2015 ZEW/Mannheim Experimental Seminar, European Development Network (EUDN) Doctoral Conference, North East Universities Development Consortium (NEUDC), Economic Science Association (ESA) European meeting, European Economic Association (EEA) meeting

2014 Symposium on Economic Experiments in Development Countries (SEEDEC), ESA European meeting, ESA North American meeting, MAYBE Workshop, Research Workshop on Microinsurance

## Awards

2016 GESS SEED Research Award

2015 IPID4all Grant

2014 GESS SEED Research Award

2011-2013 Full PhD Scholarship, Graduate School of Economics, University of Mannheim

2009-2011 Fulbright Scholarship

2009 OAS Scholarship (declined)

## Refereeing

Review of Economic Studies

## Skills

Software STATA, SAS, LaTeX

Languages Spanish (native), English (fluent), German (advanced), French (basic)

## Abstracts

**Measuring trust in institutions: a lab-in-the-field study using time preference elicitation**, *(joint with Stefan Penczynski)*, (Job Market Paper).

Trust is an important driver of economic interactions. We propose a novel way of experimentally measuring trust in institutions which draws on the experimental method used to elicit time preferences. Our method enables the elicitation of levels of trust towards institutions in an incentivized way and is not identified by the participants as a measure of trust. In contrast to other measures of trust, it is provided in the meaningful metric of subjective probability of trustworthiness of the trustee. We are measuring trust in two institutions, a formal Philippine microfinance institution and informal local money lenders. In our preferred specification, it implies subjective probabilities of payment completion of 0.60 and 0.54 for the formal and the informal institution, respectively, relative to the control treatment with payment securement. The trust in the formal institution is robustly measured to be significantly higher than in the informal institution. Unincentivized survey measures indicate a much stronger difference in the same direction, suggesting that survey measures are driven by other factors such as preferences. Additionally, we exploit the random variation generated by our experiment to examine whether a higher level of trust in the formal institution leads to a change in financial behavior. Savings in the formal institution increase significantly when the promise of future payment is fulfilled.

**Financial education, social networks and the decision to save: Evidence from a field experiment in the Philippines**.

Social networks can be a powerful tool to spread information, making it an attractive mechanism through which individuals can gain access to information and also making it less costly to provide knowledge about a technology. In this paper I investigate whether a financial training program that focuses on savings leads to an increase in participant's savings and whether the effects of the training spill over to members of the participant's network. I find that the financial training considerably increases savings of those taking part in the training. Peers' savings are also positively affected, with peers outside of the treated subjects' network experiencing the strongest effect.

**Contract nonperformance risk and ambiguity in insurance markets**, *(joint with Christian Biener, Martin Eling and Andreas Landmann)*.

Contract nonperformance risk refers to situations when valid insurance claims are not reimbursed by the insurer, which is also known as probabilistic insurance. We extend probabilistic insurance models to allow for ambiguous contract nonperformance and loss probabilities. We experimentally test theoretical predictions from our model using a field lab experiment with a low-income sample. This is a persuasive context, since especially in emerging and poorly regulated economies there is significant contract nonperformance risk. In line with our predictions, insurance demand decreases by 17 percentage points in the presence of contract nonperformance risk and by 32 percentage points when contract nonperformance risk is ambiguous. Also, ambiguity does not easily disappear with experience.

# Research Statement

I am a PhD candidate in the Department of Economics at the University of Mannheim and my long term research goal is to contribute to a deeper understanding of the behavioral aspects of the decision making process of people in developing countries. Behavioral economists have identified various ways in which individuals deviate from the behavior predicted by standard economic models that are extremely relevant for developmental programs. One is the ability to analyze, compute and remember information, the second is the failure to make choices consistent with their future interests due to bounded willpower and third their considerable regard for others well-being. People in developing countries live in environments with poor institutions, high unemployment rates, lower levels of education, and generally face tight resource constraints. These constraints put a stronger burden on the individual and make people in developing countries more prone to deviations from standard economic models and optimal behavior. Lab-in-the-field and field experiments are a great way to explore these deviations and to gain deeper insights in how the decision making process changes with these tighter constraints. My current work aims at contributing to this strand of economics. I apply lab-in-the-field and field experiments to test predictions from classical and behavioral economics in a developing country context.

## Current Work

### Measuring Trust in Institutions: A Lab-in-the-Field Study Using Time Preference Elicitation (Job Market Paper)

In this paper, coauthored with a colleague at the University of Mannheim, we propose a new way of experimentally measuring trust in institutions which draws on the experimental method used to elicit time preferences. We further analyze the determinants of trust, and the effects of trust on financial behavior.

Trust has been identified as a key factor that fosters cooperation as well as exchanges between individuals and institutions. However, there are no ways to measure trust in institutions in a behavioral manner although it has been established that behavioral measures of general trust capture trust more accurately than reported measures. To arrive at a measure of time preferences, individuals are confronted with a set of choices between smaller, sooner and a larger, future payment. We propose a behavioral trust measure in which an institution is responsible for the future payment. We identify trust by providing a payment securement in form of a post-dated check and examining the difference to the unsecured setting. To test our measure and for comparison, we implement the measure for a formal and an informal institution. Trust is thus measured as the probability that the individual attaches to receiving the future payment from the institution.

The behavioral measurement allows us to investigate the extent to which trust has an effect on financial behavior. Lack of trust in financial institutions has been identified as one of the possible causes for low levels of savings with formal financial institutions in developing countries. We investigate this question by exploiting the random variation generated by the choice of the round to be paid. We find a 25% increase in baseline savings for individuals that were eligible to receive a future payment. Results suggest a positive effect of trust on financial behavior.

## Financial Education, social networks and the decision to save: Evidence from a field experiment in the Philippines

In this paper, I investigate whether a financial training program that focuses on savings leads to an increase in participant's savings and whether the effects of the training spill over to members of the participant's network. Social networks can be a powerful tool to spread information, making it an attractive mechanism through which individuals can gain access to information and also making it less costly to provide knowledge about a technology.

Together with a microfinance institution, I implemented a small savings intervention in which participants received a financial education seminar. The seminar showed participants how to prepare a budget and a savings plan, and they received paper forms to prepare their own savings plan and budget, as well as extra copies to share with members of their network.

I find strong and significant effects of the intervention on the participants of the seminar. Moreover effects spill over to members of the lending group, and to a lower extent to lending center members. This work will allow me to deepen the understanding of the role that networks play in the community and how information propagates through a network. This is an interesting insight to understand how peoples environment and network may shape the way they make decisions.

## Contract Nonperformance Risk and Ambiguity in Insurance Markets

In this paper, together with colleagues at the University of St. Gallen and at the Paris School of Economics, we extend the probabilistic insurance models to allow for ambiguous contract nonperformance and loss probabilities. Claims considered eligible by the insured but not paid by microinsurers may have negative effects on insurance uptake. In developing countries where contract enforcement is lower, these effects might be even stronger. We experimentally test theoretical predictions from our model using a lab-in-the-field experiment in the Philippines. We implement six different treatments in which we vary the presence of nonperformance risk, the existence of ambiguity and the source of ambiguity. Our experimental implementation in a low-income insurance market reflects the particular relevance of identifying factors constraining insurance demand and the high exposure to contract nonperformance risk and ambiguity in those settings. In line with our predictions, we find that insurance demand decreases by 17 percentage

points in presence of contract nonperformance risk and by 32 percentage points when contract nonperformance risk is ambiguous. We also find low levels of learning with experience, measured by a relative constant ambiguity throughout rounds.

## Future Work

A more medium term research interest of mine is to test behavioral theories of why parents might not engage more actively in the education of their children. I plan to investigate this from the perspective of parent education committees. I propose an intervention where education committees, composed of parents, are used as a monitoring tool of teacher's performance in the class room. Parents, through the education committees, are provided the tools to monitor the childrens development and performance, as well as the performance of teachers in class. The information provided will allow parents to decide on the performance-based reward teachers receive for their effort. The objective of this intervention is to improve children's performance through the improvement of the performance and attendance of teachers in the class, relying on the assumption that performance based incentives lead to improvements in the teachers effort exerted in their teaching. Moreover, the intervention would empower parents and involve them in the Education Process of their children.

Additionally, I would like to understand through which channels parental involvement in the committees could be improved. First, I would like to test whether a low level of trust in the educational system might hinder parental involvement. This is one of the reasons that I got interested in measuring trust in institutions, the topic of my job market paper. In order to measure trust in educational institutions, I would like to use the measure that we have proposed. I would further like to randomly vary institutional trust, as we propose, in order to test whether trust is an important channel through which parental involvement might be improved. Second, I would like to examine the extent to which information flow through parents networks might lead to a stronger participation of parents in their childrens education.

To summarize, my primary research interests lie in development economics, focusing on the behavioral aspects of the decision making process of individuals in developing countries. I have followed these interests by conducting lab-in-the-field experiments in two different areas. In the short run I would like to continue analyzing the results from these field experiments, as there is still much more to discover. In the medium term I would like to dive into further projects that would contribute to the field using behavioral theories and experimental methods, drawing on the expertise and knowledge that I have gathered from my current projects.

UNIVERSITÄT MANNHEIM

Lehrstuhl für Volkswirtschaftslehre, Business Economics
L7, 3-5, 68131 Mannheim, Germany

**Prof. Dr. Henrik Orzen**

Tel. +49/621/181-1890
henrik.orzen@uni-mannheim.de
http://orzen.vwl.uni-mannheim.de

**Sekretariat:**
Frau Yvonne Reiter
Tel. +49/621/181-1895
Fax. +49/621/181-1893
reitery@rumms.uni-mannheim.de

9 November 2016

To Whom It May Concern,

I am writing to you in support of **Maria Isabel Santana**, one of our doctoral students who are going onto the job market this year. We expect that Maria Isabel will complete her PhD in spring or summer 2017. As I have neither been involved in the supervision of her thesis nor had the chance to directly work with her on a joined project, my remarks are going to be less detailed than those who have interacted more closely with her. However, I have come to know her as a dedicated and engaged researcher, very good presenter, excellent teacher and wonderful colleague.

I first met Maria Isabel several years ago when she attended one of my experimental economics courses in our master program. She participated very actively, contributed to the discussion in a very constructive way, gave an excellent presentation and really stood out as one of the best students in the class. I learned only towards the end of the term that her participation was entirely voluntary—she actually did not require any credits for her progression in our PhD program.

Much more recently Maria Isabel has been working as a teaching assistant on one of my modules and is currently in a similar role for another module that I teach. Both are advanced microeconomics course for business students. I am again very happy with Maria Isabel's contribution. She prepares diligently for her classes, is very helpful and committed, and has proven to be a popular tutor.

Regarding Maria Isabel's research, her three papers are at different stages at this point in time but my impression is that the remainder of what she needs to do, while not negligible, is relatively straightforward.

I am most impressed by her paper on *Trust in Microfinance Institutions* which is joined work with my colleagues Markus Frölich and Stefan Penczynski. Instead of relying on survey questions in which participants self-report on how much trust they have in different people or institutions, Maria Isabel and her co-authors designed a very clever field experiment that allows strong conclusions about how much participants are willing to trust different microfinance institutions. Maria Isabel and Stefan travelled several times to the Philippines to set up and organize the experiments with villagers from different provinces most of whom were clients of a regional lending agency. Overall, it took several months to gather the data. The main experiments were conducted using a lab-in-the-field approach and involved both survey questions as well as experimental measures of trust and individual attitudes towards risks. The key idea, however, was to pay the participants not on the spot but to delegate the responsibility for parts of the payments to two different, locally well known, lending institutions in a between-subjects design. Subjects were informed in advance that the payments for some other parts of the experiment would be secured by a post-dated check issued by the University of Mannheim. This enabled Maria Isabel, Stefan and Markus to measure to what extent the participants' decisions in the experiment were affected by varying degrees of subjective trust in actually receiving the future payments from each institution. They find that self-reported trust differs much more between the two microfinance institutions than actual trust, which suggests that self-reported trust in specific institutions may often be more an expression of preferences for or against particular institutions rather than a true measure of actual trust. This is a really well-done (and well-written) piece of research which indicates to me a very high level of creativity, talent and determination. Furthermore, the experimental design and the data analysis are very professional and state of the art.

Maria Isabel's second paper, *Contract Nonperformance Risk and Ambiguity in Insurance Markets*, co-authored with Christian Biener, Martin Eling and Andreas Landmann, looks at the demand effects of ambiguity aversion in the context of insurances that may possibly not fully reimburse claims even when they are valid. This too was an experiment organized and conducted in the Philippines, again as a lab-in-the-field study and again recruiting villagers from different provinces as paid subject volunteers. The authors find as their key result that both nonperformance risk and ambiguity about the contract nonperformance reduce the demand for insurance but the impact of ambiguity is much more severe than that of nonperformance risk. Again, Maria Isabel is able to demonstrate how carefully she thinks about experimental design and

proper data analysis. I find this paper very interesting and think that it makes a nice contribution. It should be publishable in a good field journal.

Unfortunately, I am not very familiar with her third piece, *Financial education, social networks and the decision to save: Evidence from a field experiment in the Philippines*, which is a study on the effects on social networks (in the traditional sense) on behavioral changes. This is currently still marked as work in progress, and I feel unable to provide comments here but I have been told that this might even be her strongest work, so I am looking really forward to reading this paper in the near future.

In summary, I regard Maria Isabel as a talented and motivated scholar as well as an extremely pleasant colleague. It is a joy to discuss ideas with her. In her area of research she addresses very important and relevant economic questions, and she uses innovative methods to obtain her results. There is no doubt in my mind about Maria Isabel's potential as an excellent researcher. She is highly intelligent, energetic, extremely hard-working and I am confident that she has it in her to achieve a brilliant and productive career. The group that hires her will benefit from her experience, intellectual capacity and open-mindedness for ideas. Over the next years, I expect her to produce a steady stream of work that will be publishable in substantial journals. I therefore strongly and warmheartedly recommend Maria Isabel to any department looking for a development economist with expertise in organizing and conducting field experiments.

If you require any more information, please do not hesitate to contact me.

Kind regards,



Fakultät für Rechtswissenschaft
und Volkswirtschaftslehre
Abteilung Volkswirtschaftslehre
Lehrstuhl für Ökonometrie

UNIVERSITÄT MANNHEIM

Universität Mannheim · Abteilung VWL · 68131 Mannheim

**Prof. Dr. Markus Frölich**

Universität Mannheim
Abteilung Volkswirtschaftslehre
Lehrstuhl für Ökonometrie
L 7, 3-5
68131 Mannheim

Telefon: ++49-(0)621-181-3647
Telefax : ++49-(0)621-181-1931
E-mail: froelich@uni-mannheim.de

To whom it may concern

**10 November 2016**

**Reference letter for María Isabel Santana**

To Whom It May Concern,

I am writing this letter in support of María Isabel Santana's application at your institution. I know her since she joined the graduate school in 2011 in Mannheim.

María Isabel is a highly recommendable PhD student, an independent and creative researcher with main research interests both in development and behavioural economics. She is passionate about development economics and spent substantial periods of time in the field in the Philippines implementing interventions and collecting primary data, upon which her three research papers are based. In addition to her past and current research she already developed an independent profile for future research projects in the field of development economics including planned projects in the Dominican Republic.

Her single-authored paper "Financial Education, Social Networks, and the Decision to Save: Evidence from a field experiment in the Philippines" builds upon an innovative field experiment María Isabel conducted and developed on her own in the rural Philippines with microfinance savings groups. Rural villages were observed to save rather little and therefore often have to rely on local moneylenders that charge extraordinarily high interest rates. Increasing precautionary savings could help to reduce dependency on such ineffective short-term loans, and to this end María Isabel conducted a financial literacy intervention that demonstrates the benefits of savings, in particular

teaching people budgeting skills and developing a savings plan. The innovative component is the network information within the local microfinance branches collected and the fact that the number of people within each savings group was randomized by her. Therefore, the intensity of treatment was exogenous in each savings group as well as the fact that treatment versus control, i.e. whether someone received the financial literacy intervention or not, was random. In combination with access to the management information system of the microfinance organization, María Isabel can analyze savings and loan amounts on a weekly basis and estimate weekly effects of the intervention on savings and loans and how they propagate within the network. Such latter analysis is particularly important in order to learn how people's savings behaviour depends on what other people in their network do.

This paper and the huge database available has large potential. At the moment, though, the paper is not yet completely finished as further empirical analyses are being added as the richness of the data and the weekly data updates permit her to look into further dynamic patterns of evolving treatment effects. Eventually I will expect the paper being published at some time in the Journal of Development Economics or American Economic Journal: Applied Economics.

Her job market paper on "Measuring trust in institutions: a lab-in-the-field study using time preference elicitation" presents an interesting and innovative lab in the field experiment in the Philippines and at the moment is the most completed of her portfolio of research papers. This research paper is at the intersection between behavioural economics and development economics and extends the concept of trust by distinguishing general trust towards other people from trust in an institution. She develops an innovative econometric methodology to measuring trust in an institution within an incentivized field experiment. This paper is joint work with Stefan Penczynski who is assistant professor in Mannheim, but María Isabel has been developing many of the innovative pieces in terms of methodology but also the intervention in the Philippines itself, which was rather challenging also in terms of logistics. In order to measure trust in different institutions she implemented a time-discounting experiment to elicit time preferences in a setting with differences in the security of payouts: a secure pay-out in the future versus a promised pay-out with uncertainty (for the participants) about whether such pay-out would ever happen. This is an innovative idea, but also in terms of implementation was innovative since a secured future pay-out needed to be implemented in the form of a check that could not bounce. María Isabel demonstrated that she can handle all such fieldwork on her own in the field, which is an important asset, in addition to being an excellent researcher, for conducting research in development economics in the future. I expect the paper to be publishable in Games and Economic Behavior or in the Journal of Organization and Behavior.

In the paper "Contract nonperformance risk and ambiguity in insurance markets" (joint with Christian Biener, Martin Eling and Andreas Landmann) she implements a lab-in-the-field experiment in the Philippines in order to examine demand for insurance when insurance contracts may fail. Lack of effective insurance, e.g. against health shocks, accidents, disability, crop loss etc., is a major concern in development economics leaving the poor without protection against many risks. Fair insurance contracts could be one solution to help households reduce such risks. However, demand for such products, e.g. micro health-insurance, tends to be very low, partly also because households mistrust the certainty of payout in case of a health event. Insurers may fail to pay the hospital bills or often only pay parts of the claim because of the several exclusion conditions in most insurance contracts. Therefore, households face the risk of non-payment by the insurer (or only partial payment). María Isabel developed an innovative lab-in-the-field experiment for the Philippines where probabilistic insurance models where extended with ambiguity, i.e. where ambiguity regarding default and loss probabilities was introduced as an additional element. In line with theoretical expectations, insurance demand decreased substantially (17 percentage points in the presence of default risk) and substantially more so (i.e. 32 percentage points) when ambiguity was also present. Ambiguity thus doubled the reduction in demand. This also has important implications for market design as it implies that regulation could also be in the interest of insurance companies in order to increase overall demand.

To summarize, I am delighted to recommend her for any assistant professorship in development economics, behavioural economics or applied microeconomics at any research university except for the top ten. She is a hard-working and creative researcher with substantial field work experience in particular in the Philippines. She has presented her work at numerous conferences (including EEA and ESA, NEUDC and EUDN and also development workshops such as PODER) and has received very commendable feedback. I highly recommend to carefully consider her application.

Yours sincerely,

Markus Frölich

Professor Dr. Markus Frölich

DEPARTMENT OF ECONOMICS
CHAIR FOR INTERNATIONAL ECONOMICS

UNIVERSITÄT MANNHEIM

**Prof. Michèle Tertilt, Ph.D.**

L 7, 3-5, Room P11/12
68161 Mannheim
Email: tertilt@uni-mannheim.de

**Secretary:**
Phone: +49-6 21 - 1 81-1851
Fax: +49-6 21 - 1 81-1841

Mannheim, November 9, 2016

Dear Recruiting Committee,

I am delighted to recommend Isabel Santana for a position in your Department. Isabel is a development economist with a focus on behavioral finance topics. It is a pleasure to write this letter for her. I highly recommend you take a careful look at her application.

Isabel is currently a sixth year PhD student in the Department of Economics at the University of Mannheim. My colleague Markus Frölich is Isabel's main advisor. I first met Isabel in 2012 when she took my second year PhD topics course. I have seen Isabel present a few times and I have also occasionally talked with her about her research. Since I am currently on sabbatical in Chicago, I missed her official job talk. In terms of research methods (field work and lab experiments) Isabel's work is quite different from my own work. Clearly her advisor and other people on her committee know her and her research better than I do. In terms of personality though, I can attest that Isabel has all it takes to become a successful researcher. She is smart, hard-working, always cheerful and fun to talk to. I also imagine her to be an excellent teacher. As far as I know, she is right on track to finishing her PhD in Spring 2017.

Isabel is a development economist. She has extensive field work experience, mostly in the Philippines. Most of her research topics have a behavioral finance focus. She uses lab-in-the-field methods (and sometimes regular field experiments) sometimes in conjunction with administrative data to investigate financial decision making in developing countries. She is particularly interested in the question of why poor people in poor countries are so little engaged in financial areas – specifically savings and insurance – when such engagement appears obviously beneficial. She has three completed papers to date. Let me first describe her job market paper, and then

describe her single authored paper "Financial education, social networks and the decision to save: Evidence from a field experiment in the Philippines" which I know best.

Isabel's job market paper is titled "Measuring Trust in Institutions: A Lab-in-the-Field Study Using Time Preference Elicitation." It is joint with Stefan Penczynski who is a junior faculty at the University of Mannheim. In this paper Isabel and Stefan set out to improve our understanding of trust in institutions, specifically financial institutions, and the related willingness to save money using a bank account. While somewhat intangible, the concept of "trust" has received a lot of attention in behavioral economics over the last decade or so. Clearly, cooperation between individuals depends on it. What Isabel investigates in this paper is not the trust in another human being, but rather trust in an institution. Measuring trust is notoriously difficult, however. So the first contribution of this paper is to develop new measures of trust. In a lab-in-the-field experiment Isabel and Stefan elicit time preference using a rather standard experiment. What is new is that they have different treatments in terms of how the payments are actually made: secure payments vs. some uncertainty in whether the promised amount would actually be paid. This seems novel and quite ingenious to me.

Given the institution in question was a bank, they were able to further use the setting to examine the causal relationship between trust and savings. Using the treatment arm where payment was uncertain, they compare those individuals who actually received the payment with those that did not. The main result is that those individuals where the induced trust was greater, ended up saving a significantly larger amount. This seems quite striking and might have very important implications. From other contexts we know that part of inequality is driven by very different financial behavior of poor and richer people. In other words, inequality is amplified by rich people getting much higher returns on their savings than poor people, partly because poorer people do not save at all and partly because they invest in very different assets (low-interest savings account vs. the stock market in rich countries). If this gulf can be partly explained by (lack of) trust in banking institutions among poorer people, that would be very important to know from a policy perspective.

I think this is a solid paper. I did not describe all the details, but many different experiments were run, different outcomes measured, and the lab experiments were also merged with administrative data. The data was carefully analyzed many different ways, as you can see from the length of the paper (62 pages). In other words, this is very serious research. I think it is also very close to something than can be submitted to a journal. I would imagine the *Journal of Development*

*Economics* or the *Journal of Organization and Behavior* to be suitable outlets for this paper. I could be wrong and they might end up publishing it even higher.

Her second (single-authored) paper is titled “Financial Education, Social Networks, and the Decision to Save: Evidence from a field experiment in the Philippines.” This paper is also interested in the (lack of) savings of poor people. The starting point of the paper is the assumption that people save too little. While this is not obvious (after all, poor people do not have much income either), it has been shown in other context, that financial illiteracy does lead to savings that are lower than optimal. So Isabel performs an intervention in a micro credit setting that aims to improve people’s financial literacy. Specifically people were taught budgeting skills and how to make a savings plan. The experiment indeed finds strong effects: those who were treated increased their savings by more than those who were not. But this is not where Isabel stops. She is particularly interested in network effects and information propagation in this context. Her network setting is very rich. She not only collected information on who is related through a family or friendship connection, but also whether people are connected through an institutional setting -- being in the same micro finance loan group or the same micro finance center (but outside the group) or neither. Without going into all the details, let me just summarize that she finds substantial network effects, but their strength differs tremendously by type and degree of connection. In other words, not only those people who received the financial literacy treatment increased savings, but also those related to them. So presumably people passed on information about what they learned. However, how much extra was saved (and what fraction of people responded at all), was quite related to whether it is a family or business connection, and whether people were directly or indirectly related.

I think this is interesting and solid work. It will require some more polishing and in particular converging on an exact punchline. But the basis is there. Eventually I thus expect this paper to be published in a similar outlet as the job market paper. A second tier general interest journal such as the *Economic Journal* could also be feasible.

Isabel also has a third project under way (I let the advisor comment on it), and many ideas for future projects. Thus I expect her to continue the excellent work in the future. Indeed her work has already been well received by the research community. She has presented her research at large general conferences (such as the EEA and ESA), at the main development conferences both in the US and Europe (NEUDC and EUDN) and at more specialized development workshops (such as the PODER and IDEAS Summer Schools in Development Economics).

In sum, Isabel has many traits needed to become a successful researcher: She is enthusiastic, hard-working and has the relevant field work experience. She is also very entrepreneurial, having cooperated with researchers from other institutions. She seems to also have the necessary applied econometrics skills. In terms of upside potential, I believe she compares well with previous Mannheim students Pia Pinger (now an assistant professor at the University of Bonn) and Bettina Drepper (now an assistant professor at the University of Tilburg). I therefore highly recommend that you take a careful look at Isabel's application. Let me add that my understanding is that Isabel is flexible geographically, looking both in North America and Europe and also Australia. In addition to Econ Departments, Isabel would also be a good fit for a Public Policy School or an Organization in the field of development (such as the World Bank or the KfW). While I expect her to land an assistant professor job, I could also see Isabel accepting a postdoc position with an established development researcher, to gain additional field experience. Please do not hesitate to contact me should you have any further questions.

Sincerely,



Michele Tertilt

SCHOOL OF LAW & ECONOMICS
DEPARTMENT OF ECONOMICS
ASSISTANT PROFESSOR FOR EMPIRICAL MACROECON

UNIVERSITÄT MANNHEIM

**Prof. Katja M. Kaufmann, Ph.D.**

L 7, 3-5, Room P01
68161 Mannheim
Germany
Phone: 06 21 / 1 81-1959
Email:kaufmann@vwl.uni-mannheim.de

Mannheim, November 7th, 2016

**Letter of Recommendation for María Isabel Santana**

To Whom It May Concern:

This is a letter of recommendation for María Isabel Santana who is applying for a position at your university. María is currently enrolled in our Ph.D. program at the Graduate School of Economics and Social Sciences at Mannheim University. I got to know her a few months ago when she asked me for comments on her job market paper. Since then I have been talking to her a few times and seen her present her job market paper.

During our discussions about her research, it became clear that María is driven by a genuine interest in development economics and a strong commitment to work hard. She has shown a high level of motivation, perseverance and organizational talent in terms of implementing several field projects, which included experiments in the field and survey data collection, leading to her research papers and further work-in-progress. Below I will summarize and discuss her job market paper, but will refer you to the letters of her main advisors for her other papers and further details.

Before discussing María's job market paper, it is important to point out her contribution to the paper, since it is coauthored with an assistant professor at Mannheim University, the microeconomist Stefan P. Penczynski. In particular, María identified and defined the need to have an incentivized and behavioral trust measure in the context of institutional trust, both in developed and developing countries. She contributed valuable input to the design of the experiment and designed the survey.

As the project manager in the field, María was responsible for the implementation of the data collection and experiments in the Philippines. She dealt with the local finance institutions and – on the basis of client data – implemented the randomization procedure. She organized and instructed the local RAs as well as the German RA.

María autonomously prepared the data, conducted all econometric analyses and prepared the results for the inclusion in the paper. She wrote the draft version of the paper and revised it according to comments of her co-author, her advisors and other faculty members.

In her job market paper *Measuring Trust in Institutions: A Lab-in-the-Field Study Using Time Preference Elicitation*, María and her coauthor propose a novel way of experimentally measuring trust in institutions which draws on the experimental method used to elicit time preferences. Their method enables the elicitation of levels of trust towards institutions in an incentivized way with the important advantages of not being identifiable by the participants as a measure of trust and of having a meaningful metric of subjective probability of trustworthiness of the trustee.

María and her coauthor measure trust in two institutions, a formal Philippine microfinance institution and informal local money lenders. They find subjective probabilities of payment completion of 0.60 and 0.54 for the formal and the informal institution, respectively, relative to the control treatment with payment securement. The trust in the formal institution is robustly measured to be significantly higher than in the informal institution. Unincentivized survey measures indicate a much stronger difference in the same direction, suggesting that survey measures might be driven by other factors such as preferences. Additionally, María and her coauthor explore the determinants of trust and exploit the random variation generated by the experiment to examine whether a higher level of trust in the formal institution leads to a change in financial behavior. Their results suggest that savings in the formal institution increase significantly when the promise of future payment is fulfilled.

In addition to her research activity, María has played a very active role in organizing events within the department (such as organizing different workshops, for example a development workshop which takes place in coordination with Frankfurt and Heidelberg University and an internal Ph.D. summer workshop). Also she has been very active outside of her studies and acted as an economic consultant for the Ministry of Economics, Planning and Development and the Cabinet for the Coordination of Social Policies in the Dominican Republic.

María's ability to communicate in English (in both oral and written form) is strong, also shown by the fact that she has successfully completed a master degree at Cornell University.

Finally let me add, that on a personal side, María is very pleasant to deal with. I am convinced that any professor would like to have her as a colleague. Moreover, I am also sure that she possesses the character which is necessary to overcome the various difficulties which one might encounter at this new stage of her career.

I hope you will find this letter helpful in your decision making process. If there is any additional information you might need, please do not hesitate to contact me by phone at +49-621-181-1959 or by e-mail at kaufmann@vwl.uni-mannheim.de.

Yours sincerely,



Katja Kaufmann