

OW4/1171: Mid-term pre-analysis plan for permanent migrants

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 3 attachments

CFO Migrant Questionnaire Wave 3_v6_3ie.pdf; CFO Household Questionnaire Wave 3 (Tagalog)_v1_3ie.pdf;
CFO_PAP_midterm_final.pdf;

Dear Ashima,

please find attached the final pre-analysis plan for the medium-run effects of the enhanced pre-departure training for permanent migrants, which we would now like to archive with 3ie. The questionnaires for the corresponding follow-up interviews are also attached. Fieldwork for this round of follow-up interviews has not started yet and is scheduled to begin next week.

Best wishes,
Toman

Pre-analysis plan: Medium-run effects of enhanced pre-departure training for permanent migrants

19 July 2015

1 Introduction

This pre-analysis plan (PAP) outlines the analysis of the medium-run effects of enhanced pre-departure orientation seminars (PDOS) for permanent migrants. It builds on our previous PAP, which focused on the analysis of the short-run effects of enhanced PDOS based on data collected in survey wave 2 (wave 1 is the baseline survey). The previous PAP was archived with 3ie on September 17, 2014.

This second PAP focuses on medium-run outcomes for which data will be collected in survey wave 3. It concentrates on the effects of the enhanced PDOS modules on socio-economic integration and success in the destination country. It also looks at diaspora engagement and potential feedback effects from migrants on their peers in the Philippines. A final third PAP will focus on the longer-run effects of enhanced PDOS based on data collected in survey wave 4 (endline survey).

The hypotheses we present below are at the center of our research interest and we will give most weight to the results that we find for this part of the analysis. These results have a confirmatory character and the analysis will therefore be conducted with special scrutiny and we will discuss in detail how the analysis will be conducted. The PAP will be archived before we start data collection of wave 3.

In addition to the confirmatory analysis we will use the data for additional exploratory analysis that is not detailed out beforehand. The exploratory analysis allows for more surprise findings and gives a chance to explore research questions that only become evident once the data is available. Due to the exploratory nature we will treat these findings differently and will give less weight to them. We will also separate the publication of confirmatory and exploratory findings.

2 Overview of the study design

The previous PAP provides a detailed overview of the study including the selection of the interventions, the sample selection and the randomization design. This section therefore only offers a summary of the most important aspects of the study design.

Interventions

Every permanent Filipino migrant is required by law to attend a brief pre-departure training, which is conducted by the Commission on Filipinos Overseas (CFO). The training covers various topics, but has a strong focus on travel regulations and immigration procedures. CFO, the key government agency tasked to manage permanent migration from the Philippines, has been pilot-testing an enhanced pre-departure training to foster the development benefits of migration for migrants, their families and the Philippines at large. In particular, the enhanced training aims to foster settlement and labor market integration and increase migrants' engagement in diaspora activities that contribute to development in the Philippines. The enhanced training has first been implemented for migrants to the US, who constitute by far the most important group of permanent migrants from the Philippines.

This study uses a randomized control trial to evaluate the effectiveness of the enhanced training. It surveys 1,273 permanent migrants and their families in the Philippines over a period of two years after the training takes place.

We test two versions of the enhanced pre-departure training. The core version (henceforth “**enhanced PDOS without employment module**”) consists of the following components:

Settlement module: This is the broadest of all modules and covers general issues related to migration and to migration to the US in particular. The module addresses topics such as cultural differences and culture shock, rights and obligations of US permanent residents, important things to take care of after arrival (social security, health insurance, driver's license, etc.) as well as information about housing and education. The module also contains an extensive Q&A part.

Financial literacy module: This module is based on the fact that migrants often experience a substantial increase in income when starting a job abroad. The module teaches basic rules of thumb on opening a bank account, financial planning, savings, sending remittances including an overview of the advantages, disadvantages, and cost of remittance channels, making a joint financial plan with the family in the Philippines on the amount and use of remittances.

(Filipino) associations in the US: Filipino associations, but also non-Filipino associations such as neighborhood associations, may be an important provider of post-arrival support for migrants. The module informs migrants about the potential benefits of associations for expanding their social network, which may ultimately help them to integrate into the US and find a decent job. Upon arrival in the US, a sub-group of migrants from the treatment group has received further encouragement via email to get in touch with a Filipino association. Migrants from the control group have received neither an encouragement to reach out to associations nor an email encouragement to do so.

Diaspora engagement: This module aims to strengthen the links between Filipino migrants and the Philippines. It covers Filipino culture and values, overseas voting rights, the right to re-acquire Filipino citizenship and government programs such as BalinkBayan and LINKAPIL, which help migrants to stay in touch with their home country and give migrants the possibility to contribute to development causes in the Philippines. Upon settlement in the US, a sub-group of migrants from the treatment group will receive further information via email to learn about donation opportunities. Migrants from the control group receive neither information on donation opportunities nor an email reminder to do so.

The second version contains all the modules mentioned above plus an additional module that covers employment-related topics (henceforth “**enhanced PDOS with employment module**”):

Employment module: The employment module aims to help migrants to find a decent job in the US, which typically constitutes the biggest challenge for Philippine migrants upon arrival in the US. The module informs about the US labor market and addresses important issues such as the recognition of certificates and diplomas, job search strategies, how to prepare a CV and cover letter and behave in a job interview.

We use the term “**enhanced PDOS**” to refer to either version of the enhanced PDOS (without and with the employment module). All migrants who participated in the enhanced PDOS also received a comprehensive handbook that covers the above topics in great detail. The handbook is an integral part of the treatment as it provides the possibility to look up the information covered in the enhanced PDOS at the time it is actually needed. There are also two versions of the handbook, one without and one with a chapter corresponding to the employment module.

The third intervention is an email intervention (henceforth “**association email**”). About one month after arrival in the US, selected migrants received an email encouragement to reach out to migrant associations in the US. The email contains contact information of migrant associations that are located in the same US state the migrant has moved to. A second email with the same content was sent about two months after arrival in the US. This intervention was randomized among migrants who receive a version of the enhanced PDOS.

Randomization

In order to establish causality, prospective migrants were randomly assigned to different versions of the pre-departure training. Pre-departure training is mandatory for all migrants. Hence, non-compliance with the treatment is of no concern. Spillover effects and control group contamination may arise if prospective migrants in the treatment group share information with migrants in the control group. To avoid such effects, randomization took place at the session level. There is one session per weekday. Hence, treatment and control trainings were scheduled on different days of the week to minimize the possibility of interaction between the two groups.

Depending on which day prospective migrants registered for their pre-departure training, they attended one of the following three versions of the pre-departure training.

- 1) Standard PDOS. This is the control condition. Migrants attend the mandatory standard pre-departure training as currently provided by CFO.
- 2) Enhanced PDOS without employment module. As detailed above, this core version of the enhanced PDOS contains new modules on settlement, financial literacy, associations in the US, and diaspora engagement.
- 3) Enhanced PDOS with employment module. This version of the enhanced PDOS contains all the modules mentioned in 2) plus an additional module that covers employment-related topics.

Randomization of the enhanced PDOS modules took place at the session level. 40% of all sessions were assigned to the control group, and 30% to the enhanced PDOS without employment and 30% to the enhanced PDOS with employment.

Table 1: Sample size for group-level intervention

	Share (of total sample)	Observations (approximately)
Control	40%	508
Enhanced PDOS without employment module	30%	381
Enhanced PDOS with employment module	30%	381

Randomization of the associations email took place at the individual level and only among those migrants who are assigned to one of the enhanced PDOS. This group is furthermore restricted to migrants who a) provided a valid email address and b) migrated to a US state with active and CFO-approved Filipino diaspora associations. Among these, 50% were randomly assigned to the treatment group.

Table 2: Sample size for email intervention

	Share (of total sample)	Observations (approximately)
Control	22%	280
Associations email	22%	280

Data

The measurement of all outcomes of interest is based on surveys conducted with migrants and their families remaining in the Philippines. All survey instruments are extensively pretested before the actual survey. In total, there are four rounds of data collection. All of them are

computer-assisted to facilitate tracking over time and improve accuracy through automated routing and error checks.

The analysis laid out in this PAP is based on data, which will be collected in survey wave 3. It will take place twelve months after the departure of each migrant and interview migrants at their destination on the phone. In case a migrant cannot be reached for the interview even after several attempts, a knowledgeable family member in the Philippines will be interviewed instead to provide proxy information about the most important indicators. While these indicators are likely to be measured with error, the proxy interviews help to keep attrition as low as possible.

Around the same time (twelve months after the departure of each migrant), interviews with the family members remaining in the Philippines will take place. These interviews will be conducted face-to-face and revisit the same households that were interviewed in survey wave 1.

This PAP focuses on outcomes collected in survey wave 3. Both the migrant and the family questionnaire of survey wave 3 are attached to this document.

3 Hypotheses

The enhanced PDOS has several components that might influence different outcome dimensions. We will collect a rich dataset that will allow us to test a number of hypotheses. Most importantly the evaluation does not only seek to understand the effects on various outcome dimensions but also the causal chain that leads to these effects. The very idea of the PDOS is that migrants make suboptimal choices because they do not have sufficient information before they leave. The causal chain that we have in mind is that changes in knowledge lead to changes in behaviors, which leads to changes in outcomes.

We can group our hypotheses along two dimensions. First, we can group them along the causal chain:

- Impact on knowledge: Enhanced PDOS provide prospective migrants with additional information relevant for migration and settlement in the destination country.
- Impact on behavior: Enhanced PDOS change the behavior of the migrants. Individuals will make different choices based on the additional knowledge they gained in the PDOS.
- Impact on outcomes: Enhanced PDOS have a positive effect on outcomes of migrants and their families as migrants make more informed choices.

Second, we can group our outcomes by thematic fields (domains). We will distinguish between the following domains:

1. Migration and settlement
2. Employment
3. Networks and Filipino Diaspora
4. Individual well-being
5. Finances
6. Spillovers on households in the Philippines

Within each domain we test whether a specific treatment has an impact. We condense the information from various indicators related to a specific hypothesis in order to reduce the number of hypotheses to be tested and therefore to increase statistical power. Where feasible we will create meaningful indicators based on various questions in the questionnaire. Where the creation of such an indicator is not possible we construct standardized treatment effects as suggested by Kling et al. (2007) and employed by Finkelstein et al. (2010) and Almeida et al. (2012) (see description in Section 4: Power calculations and multiple hypotheses testing).

Impact on outcomes

Hypothesis domain 1: Migration and settlement

Hypothesis 1.1: Being exposed to the **enhanced PDOS** helps migrants to settle administrative matters in the destination country more quickly.

Indicators:

- Number of administrative matters settled at the time of third interview
 - Sum of answers with “yes” on questions Q7, Q8, Q9, Q10 (answer categories 1 and 2), Q11 (having a social security number, health insurance, driver’s license, bank account, credit card)
 - Any item where more than 95% of the control group answer with “yes” will be removed from the indicator.
 - These questions are only asked in wave 3 if the respondent answered with “no” for the respective item in wave 2. “yes” responses will be used from wave 2.

Specific controls from baseline survey:

- Has bank account in the Philippines (169)

For explanatory purposes we will also examine the items separately, but we will use the index as the main outcome to avoid loss of statistical power due to multiple hypothesis testing.

Hypothesis domain 2: Employment

Hypothesis 2.1: Being exposed to the **enhanced PDOS** has a positive average impact on employment outcomes – both for the employment probability and in terms of income.

Hypothesis 2.2: Being exposed to the **enhanced PDOS with employment module** has an even more positive average impact on employment outcomes – both for the employment probability and in terms of income.

Indicators:

- Individual has paid employment (Q16)
- Individual monthly income before taxes (Q22)
 - Will be coded as zero for individuals who are not working
- The logarithmic transformation of monthly income
 - For zero income we will use $\log(1)$

Specific controls from baseline survey:

- Has applied to have qualifications recognized (150)
- Number of correct answers regarding resume content (152)
- Self-assessed probability to have a job after one year (144) (will be coded as 100 for those who already had a job before departure)
- Employment plans (138)

In order to increase statistical power we aggregate the outcomes in this domain into a standardized treatment effect as described in Section 4. This aggregation allows us to investigate whether the enhanced PDOS has any effect on employment related outcomes.

The main sample for this analysis will be based on all individuals, irrespective of whether or not they stated in the baseline interview that they already had a job waiting for them in the US. However, for better comparability with the short-run effects of the enhanced PDOS, we

will also conduct the analysis based on the sample of individuals who did not have a job in the US before their departure.

Employment status and income are the main indicators for this outcome domain as they are observed for all migrants, even for those who are not working. In addition to the outcomes described above we will explore a) whether income and occupational quality are higher conditional on working and b) whether the reservation wage is different for those who are not working. The specific outcomes used for those who have a job are:

- Individual monthly income before taxes (Q22)
- The logarithmic transformation of monthly income
- Qualifications and skill match of current job (Q23)
- Satisfaction with current job (Q26)
- Is currently not looking for a new job (Q29)

We will estimate a standardized treatment effect for these outcomes related to income and occupational quality.

The outcome used for those who are not working is:

- Reservation wage (Q31)
 - Values higher than USD 10,000 will be set to missing

As these outcomes are only available for those who are working / not working and thus for an endogenous sample, they will be separated from the analysis above and not be included in the standardized treatment effect above.

Specific controls from baseline survey:

- Has applied to have qualifications recognized (150)
- Number of correct answers regarding resume content (152)
- Employment plans (138)

Hypothesis domain 3: Networks and Filipino Diaspora

Hypothesis 3.1: Encouraging migrants in the **enhanced PDOS** to reach out to Filipino and Non-Filipino organizations in the United States increases the size and quality of the personal network.

Hypothesis 3.2: Providing migrants with encouragement to reach out to Filipino organizations and providing them with specific contact information through the **association email** increases the size and quality of the personal network.

Indicators for network size:

- Number of new people with Filipino background the migrant knows on a personal basis (Q68)
- Number of new people with Non-Filipino background the migrant knows on a personal basis (Q69)

- To obtain the total effect on network size we will generate a new outcome as the sum of Q68 and Q69.

Indicators for network quality:

- Highest educational attainment of closest (Q75) and second-closest new contact (Q79)
- Visited people of non-Filipino origin in their home (Q72)
- Received non-Filipino visitors (Q73)

We will estimate a standardized treatment effect for the outcome domain network quality.

Specific controls from baseline survey:

- Knows Filipino association in the US (135)
- Wants to join Filipino association in the US (136)
- Wants to join other club/association in the US (137)
- Number of people known in the US (116/117)

Hypothesis 3.3: Encouraging migrants in the **enhanced PDOS** to reach out to Filipino and organizations in the United States increases their engagement in matters related to the Philippines.

Hypothesis 3.4: Providing migrants with encouragement to reach out to Filipino organizations and providing them with specific contact information through the **association email** increases their engagement in matters related to the Philippines.

Indicators:

- Participated in activity that encouraged development in the Philippines (Q87)
- Engaged in Filipino community-related activity (Q88)
- Donated money to cause in the Philippines (Q90)

Our main outcome will be an index defined as the sum of the three binary indicators listed above.

Specific controls from baseline survey:

- Knows Filipino association in the US (135)
- Wants to join Filipino association in the US (136)
- Wants to join other club/association in the US (137)
- Number of people known in the US (116/117)

Hypothesis domain 4: Individual well-being

Hypothesis 4.1: Being exposed to the **enhanced PDOS** has a positive impact on individual well-being of the migrant.

Indicators:

- Mental health measured by the MHI-5 index developed by Veit and Ware (1983).

- This index has also been used in a study on migrant well-being by Stillman et al. (2012).
- The MHI-5 is based on five items and ranges from 5 to 25. Higher scores indicate better mental health. The MHI-5 is the sum of responses to Q42 a-e with reverse coding of a and b.
- Migrant specific well-being
 - This is a self-developed variant of the MHI score to measure well-being related to migration. The score is the sum of responses on two questions (42 g and h) and ranges from 2 to 10. Higher scores indicate better migrant specific well-being.
- General life satisfaction (Q44)
- Would recommend the US to other Filipinos as a place to live (Q45)
- Self-assessed level of integration into the US society (Q46)

In this domain we will estimate a standardized treatment effect to obtain the overall effect on well-being. We will also test the effect of the enhanced PDOS on the two well-being indicators and the three additional questions.

Specific controls from the baseline survey:

- MHI-5 index from baseline survey (210)

Hypothesis domain 5: Finances

Hypothesis 5.1: Being exposed to the **enhanced PDOS** has a positive impact on financial decision-making.

Indicators:

- Answer “yes” to having any personal savings (Q92)
- Level of personal savings in logs (Q92a)
 - Missing values treated as “missing”
 - For zero savings we will use $\log(1)$
- Amount or remittances sent last time (Q96)
 - Missing values treated as “missing”
- Fees paid per USD remitted
 - Calculated as $Q98/Q96$
 - Missing values treated as “missing”
- Differences in opinion between migrant and family over the use of remittances (Q101)
 - Missing values treated as “missing”
 - “No” treated as positive outcome
 - Will be compared to response from household survey (Q115)

We will not estimate a standardized treatment effect for this outcome domain. The enhanced PDOS aims to empower migrants with information, but does not recommend migrants to take specific actions. For some of the indicators listed above, it is therefore difficult to define what

an advantageous outcome is. As a result, we refrain from estimating the overall effect of the enhanced PDOS on this outcome domain and use the single indicators instead.

Specific controls from the baseline survey:

- Has bank account in the Philippines (169)
- Has outstanding debt of more than PHP 20,000 (181)

Hypothesis domain 6: Spillovers on households in the Philippines

Hypothesis 6.1: The **enhanced PDOS** indirectly affects households of migrants in the Philippines through different feedback from the migrant about life in the US or changes in remittance flows.

In addition to the question on remittances (see hypothesis domain 5) we will test whether the enhanced PDOS has an effect on the following indicators collected in the wave 3 household survey:

- Perception of the situation of the migrant in the US
 - Sum of responses to Q119 a-j divided by the number of valid responses
- Interest in the US
 - Frequency of news consumption about the US (Q141)
- (Intention to) travel to the US
 - Indicator variable equal to one if household member has travelled to the US in the last twelve months or is planning to do so in the next twelve months (Q42 or Q43 equals “yes”)
- Migration intention of the remaining household members as reported by main respondent
 - Indicator variable equal to one if household member is planning to migrate (Q46)
 - Indicator variable equal to one if household member wants to migrate to the US (Q46a=“United States”)
 - Indicator variable equal to one if household member has talked to relatives regarding petitioning him/her (Q50=“yes”)
- Migration intention of the remaining household members as self-reported in individual interviews
 - Indicator variable equal to one if household member states general wish to migrate (Q142)
 - Indicator variable equal to one if respondent wants to migrate to the US (Q143=United States)
 - Indicator variable equal to one if respondent has already started preparations for moving permanently (Q144=1)
- Perceived effect of migrant’s emigration on the household
 - Index equal to the sum of answers “better” to Q117a-g divided by the number of valid responses

We will estimate a standardized treatment effect for this outcome domain.

Specific controls from the baseline household survey:

- Respondent's age (14), squared age, gender (13), education (20), relationship to household head (11), relationship to migrant (12), migration intention (23), having a job or business (24), enrolled in an educational institution (42), personal migration experience (54), indicator variable equal to one if any member of the household has personal migration experience (54), number of household members, number of bedrooms (74), indicator variable equal to one if household is located in National Capital Region (1)

Mechanisms

Any effects of the enhanced PDOS on the various outcome domains must result from a change in behavior induced by the enhanced PDOS. The second set of hypotheses investigates whether such changes in behavior can be observed in order to learn more about the mechanisms behind potential effects on the outcomes. We primarily look at behavior related to job search and establishing a social network.

Hypothesis M.1: Migrants consider the enhanced handbook that was disseminated during the enhanced PDOS an important source of information.

Indicators:

- Migrant states that handbook has been an important source of information (Q14)
- Duration since migrant looked into the handbook the last time (Q13)

Hypothesis M.2: Being exposed to the **enhanced PDOS with employment module** induces migrants to have their skills recognized in the United States.

Indicators:

- Migrant has initiated a process to have his/her qualifications recognized (Q35)
- Migrant has his/her qualifications recognized successfully (Q36)
 - Indicator variable equal to one if Q36=1 (fully recognized) or Q36=2 (partially recognized)
- Migrant is more likely to study or to plan to study at a college or a university in the US
 - Indicator variable equal to 1 if Q37 or Q38 equals "yes"

Specific controls from baseline survey:

- Has applied to have qualifications recognized (150)
- Number of correct answers regarding resume content (152)
- Employment plans (138)

Hypothesis M.3.1: Being exposed to the **enhanced PDOS** affects the way migrants establish networks and try to integrate.

Hypothesis M.3.2: Receiving the **associations email** changes the way migrants establish networks and try to integrate.

Indicators:

- Migrant had contact with a non-Filipino organization in the United States
 - Sum of “yes”-responses to questions Q65 a-d
- Migrant had contact with a Filipino association in the United States (Q61)

Specific controls from baseline survey:

- Knows Filipino association in the US (135)
- Wants to join Filipino association in the US (136)
- Wants to join other club/association in the US (137)
- Number of people known in the US (116/117)

Hypothesis M.3.3: Being exposed to the **enhanced PDOS** changes the motivation to contact a Filipino association. Being provided with more information about settlement in the US in the enhanced PDOS reduces the need to reach out to associations for practical help and advice. The motivation to reach out to association is therefore likely to stay connected to Filipino culture.

Indicators:

- Motivation to contact association is to get help and advise
 - Sum of “yes”-responses to Q63 b, c, g
- Motivation to contact association is to find friends and stay connected to Filipino culture
 - Sum of “yes”-responses to Q63 a, d
- Open-ended responses (Q63h) will be categorized and added to the respective index.

Specific controls from baseline survey:

- Knows Filipino association in the US (135)
- Wants to join Filipino association in the US (136)
- Wants to join other club/association in the US (137)
- Number of people known in the US (116/117)

It should be noted that we may not be able to test this hypothesis due to lack of statistical power. The indicators listed above can only be measured for migrants who have been in touch with a Filipino association, which may be a relatively low number.

Impact heterogeneity

Hypothesis Het.1: Treatment effects are larger for individuals who would have voluntarily participated in the PDOS (self-selection on expected gains).

Relevant characteristic:

- Answer “yes” on question Q_VOLPART in the migrant baseline questionnaire.

In the preliminary baseline data almost 90% answered “yes” on this hypothetical question. Given the very uneven sample split, we will most likely not be able to test this hypothesis.

Hypothesis Het.2: Treatment effects are larger for individuals with lower education.

Relevant characteristic:

- Education (college graduate or higher)

Hypothesis Het.3: Treatment effects are larger for individuals with lower baseline knowledge.

Relevant characteristic:

- Sum of correct answers on questions 153-159, 163 in the baseline survey. Sample will be split at the median.

Hypothesis Het.4: Are treatment effects different for men and women? We have no prior about the relationship by sex and will test whether effects are different for women and men.

Relevant characteristic:

- Gender

4 Estimation

Estimation of main effects

For outcomes where no pre-treatment measurements are available, we estimate the following equation:

$$Y_{i,t=3} = \beta_0 + \beta_1 T_i + \beta_3 P_{i,t=3} + X'_S \theta + \varepsilon_i \quad (1)$$

$Y_{i,t=3}$ is the outcome measured in wave 3 and $P_{i,t=3}$ is an indicator whether this outcome was collected in a proxy interview with a family member in the Philippines. T_i is an indicator for being exposed to either version of the enhanced PDOS and β_1 will thus provide the treatment effect of interest. Note that a subsample of treated observations also receives the associations email intervention. β_1 therefore captures the overall effect. Equation (3) below estimates the separate effect of the email interventions. X'_S is a vector of pre-treatment covariates that are expected to be strongly correlated with the outcome. Their inclusion in the model should reduce the error variance and improve balance. We include in this vector age, squared age, gender, education, time since arrival in the US (log days), an indicator whether the person migrates alone or with family members, indicators for migrants going to Hawaii and California, an indicator for frequent internet use, self-assessed English skills, and an indicator whether a person already has a job waiting in the US. Hypothesis-specific control variables are indicated at the respective hypothesis description. However, in hypothesis domain 6 (Spillovers on households in the Philippines), we will use a different set of pre-treatment covariates as specified above.

Hypotheses that specifically test the effect of the employment module are estimated with the following equation:

$$Y_{i,t=3} = \beta_0 + \beta_1 T_i + \beta_2 TE_i + \beta_3 P_{i,t=3} + X'_S \theta + \varepsilon_i \quad (2)$$

T_i is an indicator for being exposed to either version of the enhanced PDOS. TE_i is an indicator for being exposed to the enhanced PDOS with employment module. β_2 captures the additional effect of the employment module. $\beta_1 + \beta_2$ capture the total effect of the enhanced PDOS including the employment module.

Finally, to test the effect of the associations email, we estimate the following equation for the sample of migrants who a) provide a valid email address and b) migrate to a US state with active and CFO-approved Filipino diaspora associations:

$$Y_{i,t=3} = \beta_0 + \beta_1 T_i + \beta_2 AE_i + \beta_3 P_{i,t=3} + X'_S \theta + \varepsilon_i \quad (3)$$

AE_i is an indicator whether an individual received the associations email. β_2 captures the additional effect of the associations email. $\beta_1 + \beta_2$ capture the total effect of the enhanced PDOS including the associations email.

Depending on the frequency of proxy interviews with family members we will also estimate all equations only for the sample of migrants who were interviewed directly.

Calculation of standard errors

As we do not expect intra-class correlation in the outcomes (see our explanation in the previous PAP), we will use heteroscedasticity robust Huber-White standard errors.

Estimation of heterogeneous impacts

We will estimate heterogeneous treatment effects by interacting the treatment status with the variable of interest.

Power calculations and multiple hypotheses testing

Our power calculations are based on the assumption of no intra-class correlations (see our explanation in the previous PAP). We assume attrition in the third wave to be 20 percent of the baseline sample. Initial sample sizes in the various treatment arms are displayed in Tables 1 and 2. For the enhanced PDOS we conduct the power calculations for the comparison of one version of the enhanced PDOS vs. the control group. We conduct our power calculations for significance levels of 10 and 5 percent.

Table 4: Power calculations (assumed attrition of 20%)

Enhanced PDOS intervention (Control group size 508 and treatment group size 381)				
	10% significance level		5% significance level	
	Normal	With pre-treatment	Normal	With pre-treatment
0.2 st.dev.	0.84	0.92	0.75	0.86
0.5 st.dev.	1.00	1.00	1.00	1.00
0.8 st.dev.	1.00	1.00	1.00	1.00

Associations email intervention (Control and treatment group size 280)

	10% significance level		5% significance level	
	Normal	With pre-treatment	Normal	With pre-treatment
0.2 st.dev.	0.68	0.79	0.56	0.68
0.5 st.dev.	1.00	1.00	1.00	1.00
0.8 st.dev.	1.00	1.00	1.00	1.00

For the PDOS intervention and a continuous variable such as the standardized indicators we would be able to detect an effect in the order of 0.2 standard deviations with a power of 0.84 at the 10% significance level. At the 5% significance level such an effect would be detected with a power of 0.75. Effects of 0.5 standard deviations or larger can be detected with a power of almost one at all significance level (see Cohen, 1988 for a discussion on effect sizes). This degree of power allows us to detect effects also after adjusting for multiple testing (as explained below). For some variables we collect pre-treatment information at baseline, e.g. for measures of subjective well-being. Including these pre-treatment measures in the estimation reduces error variance and therefore increases statistical power. For subjective well-being Ehrhardt et al. (2000) suggest a year-to-year correlation of about 0.5. Using pre-treatment information increases statistical power to detect an effect of 0.2 standard deviations considerably from 0.75 to 0.86 at the 5% significance level.

For other covariates where no pre-treatment information is available (as those variables are not defined for non-migrants), we will include a set of covariates that are likely predictors of the outcome to increase statistical power.

Due to the smaller sample size, power to detect effects for the email intervention is somewhat lower for small effects. For medium and large effects, however, power is close to one.

To account for problems with multiple hypothesis testing we follow the approaches by Finkelstein et al. (2010) and Almeida et al. (2012). As described above, we group our outcomes into domains and estimate the effects on an overall index or we estimate standardized treatment effects within each domain.

To estimate the standardized treatment effects we follow the procedure of Kling et al. (2007). We normalize each outcome within a domain by subtracting the mean of the control group and dividing by the standard deviation of the control group. Let Y_k be the k th of K outcomes, let μ_k be the control group mean, and let σ_k be the control group standard deviation. The normalized outcome is $Y_k^* = (Y_k - \mu_k)/\sigma_k$. The summary index is $Y^* = 1/K \sum_K Y_k^*$. We reverse the signs for adverse outcomes, so that a higher value means a more beneficial outcome. These estimates show us whether there is an overall effect of an intervention on an outcome domain.

We will look at the effects on the individual indicators to examine which dimensions are driving a potential overall effect. We will treat the results with extra care if we do not find an overall effect but an effect on an individual indicator. In order to account for multiple

hypotheses testing, we will apply the Westfall and Young step-down resampling methods for the hypotheses tests for the effects on individual indicators.

For the investigation of heterogeneous treatment effects we will follow the recommendations of Fink et al. (2010) and employ the Benjamin and Hochberg step-down procedure. We will only investigate treatment effect heterogeneity for the overall effects and not for the individual indicators to reduce the number of hypotheses.

Strategies to deal with attrition

As detailed in the previous PAP, we employ several strategies to minimize attrition. Nevertheless, selective attrition remains a serious concern. In a first step we will estimate whether attrition itself is a function of one of the interventions. We will do so by using an indicator whether a migrant could be re-contacted as outcome in equation (1). If an F-test of joint significance of all treatment indicators does not reject the null of no effects at the 5% level, we will conduct the analysis without adjustments for attrition and assume that attrition is random conditional on the covariates included in equation (1). If we find a significant relationship between treatment status and attrition we will construct non-parametric bounds on our treatment estimates as suggested by Behaghel et al. (forthcoming). For this purpose, we will collect information on all contact attempts.

5 Literature

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