

Pre-Analysis Plan: Follow up Survey

“Personal initiative” versus “interpersonal initiative”: testing the psychological, social, and economic effects of two models of women’s agency in Niger

1. Background

See “HybridPAP1_2018.11.16” for full background detail.

This one-year follow-up survey assesses economic, psychological, and social impacts of the lab-in-the-field experiment as well as descriptive measures related to the culturally-specific orientations towards women’s economic activity.

2. Experimental Design

See “HybridPAP1_2018.11.16” for full design detail. A flow chart of the research program is below.

Date	Activity	Sample		
June 2017	Randomization in ASP	Enrolled in Social or Complete Productive Packages of the Sahel Adaptive Social Protection Program in Niger*		
	Subsample selection	Randomly selected subsample of beneficiaries in 6 communes (n=2,628)		
February 2018	Group-level randomization	108 groups randomized to 25% , 50%, or 75% saturation of Treatment (n=1,332) versus Control (n=1,296)		
	Individual-level randomization	1. Control (no additional intervention) (n=1,296)	2. Treatment: Personal Initiative (n=666)	3. Treatment: Interpersonal Initiative (n=666)
March - May 2018	Lab-in-the-field experiment		Treatment intervention delivered, followed by measurement	Treatment intervention delivered, followed by measurement
March - May 2019	Follow-up survey	Follow-up survey conducted	Follow-up survey conducted	Follow-up survey conducted

* Complete productive package includes regular cash transfer, savings group and coaching, community sensitization, micro-entrepreneurship training, life-skills training, and lump-sum cash grant. Social includes all minus the cash grant.

This 1 year follow up survey assesses a greater range of psychosocial and economic outcomes to all participants in the sample (n=2,628), comprised of those randomly assigned to the control group (n=1,296) and one of the two experimental conditions (“Personal Initiative” and “Interpersonal

Initiative”) (n=666 per condition). These two interventions test the effects of two different types of role models by making salient different elements of Amina’s story, as presented in the community sensitization component of the ASP productive measures (the Sahel Adaptive Social Protection program). The first presents Amina as a woman who takes “personal initiative” by being proactive, strategic, and innovative in her pursuit to build her business. The second presents Amina as a woman who takes “interpersonal initiative” by collaborating with her family and teaching others new skills in the course of building her business. We assess how these two narratives and accompanying reflection exercises (i.e. “salience interventions”, further described below) affect economic engagement behaviors, economic decision making, self-construals, and interpersonal processes.

The follow up survey is delivered by enumerators to all participants in the sample. Enumerators are blind to condition assignment and administer the survey to female respondents in a private space in their homes or near their homes. Enumerators ask respondents a series of economic, psychological, social, and program-related measures as well as implementation checks. Economic measures include those related to the respondent’s economic activity, business practices, savings practices, and food insecurity. These are a sub-set of outcomes from the multi-country pre-analysis plan for the Sahel Adaptive Social Protection Program study (<https://doi.org/10.1257/rct.2544-4.0>). Psychological outcomes include measures of depression (CESDR-10), wellbeing and self-integrity, and self-efficacy. Social outcomes include measures of social standing and social capital, social cohesion, prosociality, and decision-making in the household. Program-related measures include program evaluation and self-reported participation in measures of the ASP program productive package, including the savings groups, the life skills training, and the business skills training. We also assess descriptive measures of cultural orientation, including causal understandings of women’s economic success and desired emotional states. Lastly, we collect sociodemographic measures including age, education level, marital status, relationship to head of household, and ownership of a telephone.

Respondents receive one of two versions of the survey, the full version (approximately 45 minutes) or abbreviated version (approximately 10 minutes). Respondents already interviewed in the main ASP follow-up household survey (<https://www.socialscicenceregistry.org/trials/2544>) and who have already been asked many of the questions shared with this follow up survey receive the abbreviated version; respondents’ data from the two surveys will be integrated after the data collection periods. Those not already interviewed in the ASP follow-up receive the full version of the follow up survey.

3. Empirical Analysis

3.1 Internal Validity

We check whether balance was achieved across all three arms on the following sociodemographic variables among those surveyed based on data from a pre-program registry census:

- Poverty (PMT) score
- Relationship to head of household (head of the household vs 1st wife/2nd wife/3rd wife/4th wife/other)
- Age of the beneficiary
- Nomad status

- Household size

We also document that we achieved balance across our stratification variables (collected before the start of this study):

- Timing of the ASP training activities (Early: February-March / Late: April)
- ASP treatment arm (Complete: all components / Social: all except cash transfer)
- Participation in a prior ASP baseline survey (Y/N)

The three treatment specifications are as follows:

$$Y_i = \beta_0 + \beta_1 T.Psych_i + \varepsilon_i$$

$$Y_i = \beta_0 + \beta_1 T.Personal_i + \beta_2 T.Interpersonal_i + \varepsilon_i$$

$$Y_i = \beta_0 + \beta_1 T.Sat.50_i + \beta_2 T.Sat.75_i + \varepsilon_i$$

Y_i refers to the sociodemographic variables listed above for individual i . $T.Psych_i$ refers to the pooled treatment of the two psychological conditions, which include $T.Personal_i$, indicating assignment to the “personal initiative” intervention, and $T.Interpersonal_i$, indicating assignment to the “interpersonal initiative” intervention. The reference category in these models is the control condition. $T.Sat.50_i$ and $T.Sat.75_i$ indicate group-level assignment to 50% and 75% saturation level of treatment within a group, with the reference category for both being a saturation level of 25%. We apply standard errors clustered at the group level.

We similarly check for balance on the variables considered for heterogeneity analyses.

3.2 Non-participation

We check whether balance was achieved across all three arms for non-participation (attrition) in the follow-up survey using the same specification above.

3.3 Analysis strategy by outcome type

In this hybrid strategy, we define Type A and Type B outcomes and have separate analysis strategies for each. We are not using the traditional designations as certain measures as “confirmatory” or “exploratory.” Rural Niger is a radically understudied context from Western-based perspectives and approaches in psychology. Few if any wise interventions (Walton & Wilson, 2018) have been attempted in a lab-in-the-field experimental design in African country contexts, particularly not in under-resourced settings like rural Niger. For this reason, exploratory research of this type is essential. Exploratory research which examines the cultural context through culturally-adapted variants of motivational interventions is particularly important given that rural Niger differs so much from the West (e.g. where the vast majority of the population is Muslim, has 0-1 years of formal education, and has little access to global media). Thus, from a theoretical perspective, all outcomes are more exploratory than confirmatory. Further, as in this interdisciplinary collaboration, some measures are core to the psychosocial manipulation while others are core to economic development processes. For these reasons, we use the designations Type A and Type B to distinguish between measures from a statistical perspective, rather than theoretical one, with a primary goal of reducing the false discovery rate.

1) Type A include: the economic outcomes of: respondent’s economic activity, business practices, savings practices, and participation in the program and the psychosocial outcomes of: depression, self-efficacy, anticipated social mobility, and social standing.

For Type A outcomes, we proceed with the primary models specified in Part 3(C) below.

2) Type B outcomes are those that have been piloted but whose properties have not been previously evaluated, and whose composition is subject to change based on an evaluation of the properties in exploratory analyses. Type B outcomes include, in preliminary groupings: decision making, social support, social trust and cohesion, and prosociality.

For Type B outcomes, we first generate measures through exploratory factors analysis, factor loadings of individual items, and assessment of correlations with theoretically related and unrelated measures. In addition, we examine related qualitative responses to better understand how the measures were interpreted. We assess the variability in our measures. For example, if certain composite variables have minimal variation (e.g. 90% of observations have the same value), they may be omitted from the analysis of treatment effects.

Second, we assess the probabilities of different hypotheses being true. We do this through traditional null hypothesis significance testing methods. In these processes and in combination with analysis of other recent datasets, we will furthermore assess how central certain measures are to the theory – which hypotheses should be primary versus secondary and which moderators might identify the boundary effects of the theory in exploratory analyses.

Psychosocial outcomes	
	Construction Notes
Mental health and subjective wellbeing	Index of the following components : <ul style="list-style-type: none"> • Depression: 10 questions from (CESD-R-10), (0-7, recode to 1-4); sum; items 5 and 8 reversed • Life Satisfaction: Cantril ladder of life satisfaction (1-10) • Inner peace: Inner peace (1-10) • <i>[If loads with other mental health variables]</i> God’s blessing [1-5] • Subjective physical health [1-5]
Self-efficacy index	Index of the following components: 4 questions from GSE-10 and 1 question from Rosenberg Self-Esteem; (1-4)
Social standing index	Index of the following components: <ul style="list-style-type: none"> • Good person [1-10] • Respected person [1-10] • Opinion followed [1-10]^a • Social position [1-10]

^a The question: “count of people who have sought respondent’s advice in the last six months” may be added to this index or to the “social support” index (see Type B outcomes) depending on which factor it loads more highly on

Anticipated social mobility	<p>Single item:</p> <ul style="list-style-type: none"> • Expected social position in 2 years [1-10]
Decision-making in the household*	<p>Index of the following components: How much opinion matters [1-3] in decisions related to:</p> <ul style="list-style-type: none"> • own earnings • daily spending • non-agricultural businesses <p>Other:</p> <ul style="list-style-type: none"> • Household has not prevented from working outside the home [0/1] • Able to tell partner you disagree (0-3; never to most of the time) • <i>[If loads with other decision-making variables]</i> Feel respected by hh in relation to business [0-3]
Social support index*	<p>Index of 3 components^a</p> <ul style="list-style-type: none"> • Count of people could ask for activity advice (sum: in hh and outside hh) • Count of people could ask for conflict advice (sum: in hh and outside hh) • Probability of putting together a small sum of money (0-4)
Social trust and cohesion index*	<p>Index of 3 components</p> <p>Trust in village</p> <ul style="list-style-type: none"> • Can count on other women in village [1-4] • Out of ten, how many others in village can trust [0-10] <p>Tensions (reverse)</p> <ul style="list-style-type: none"> • Number of personal enemies [0-3] • Household tensions in last 6 months [0-3] <p>Social closeness</p> <ul style="list-style-type: none"> • Inclusion of self in (closeness to) household* [1-4] • Inclusion of self in (closeness to) community [1-4] • Inclusion of self in (closeness to) partner* [1-4]
Prosociality* (redistributive preferences)	<p>Index of the following components</p> <ul style="list-style-type: none"> • Amount given to less fortunate others, last 2 months • Should save or share excess yields with less well off [0/1] • What proportion of excess yields should give to less well off [0-100] • Prefer that village develops together or separately [1/2] • Duty to take care of people in village [1-4]
Economic outcomes	
Construction Notes	

<p>Beneficiary non-agricultural businesses^b</p>	<p>Index of 5 components</p> <ul style="list-style-type: none"> • Count of household non-agricultural business in last 12 months in: food transformation, commerce, other non-agricultural, other • Count of businesses started in the last year • Count of businesses intends to expand business (vs maintain or abandon) • Estimated value of non-agricultural activity assets, winsorized at 98p • Estimated investment in non-agricultural business, winsorized at 98p
<p>Earnings in beneficiary non-agricultural businesses*</p>	<ul style="list-style-type: none"> • Total estimated business profits in last 30 days for all non-agricultural businesses owned or managed by beneficiary. Revenue is divided by number of co-owners. Winsorized at 98p. • Total estimated business revenue in last 30 days for all non-agricultural businesses owned or managed by beneficiary. Revenue is divided by number of co-owners. Winsorized at 98p.
<p>Count of good business practices</p>	<p>Summed index of following practices in primary activity</p> <ul style="list-style-type: none"> • working capital and personal funds kept separate [0/1] • has ledger [0/1] • knows which of own offerings are most profitable [0/1] over last three months... • negotiated with supplier over prices [0/1] • has not run out of stock [0/1]
<p>Financial engagement: savings practices</p>	<p>Index of the following components:</p> <ul style="list-style-type: none"> • Total estimated current savings in AVEC groups • Total amount saved in AVEC savings groups within last year
<p>Self-reported participation in program</p>	<p>Average of the following components:</p> <ul style="list-style-type: none"> • Percentage of times absent from an AVEC group meeting [0-10 past sessions] (reverse coded) • Percentage of days attended life skills training [0-6, capped at 6] and entrepreneurship training [0-6, capped at 6]
<p>Lower prior probability of being affected</p>	
<p>Household food insecurity</p>	<p>Index of:</p> <ul style="list-style-type: none"> • Having gone hungry due to lack of food [0-3] • Having gone a full day without food [0-3] • Weighted sums of days out of last 7 consumed the following items: vegetables*1 + fruit*1 + meat/fish/eggs*4 (reverse coded)

^b We will conduct a robustness analysis with the main business only

Self-reported evaluation of the program	Situation after receiving the program [1-5; Much worse to much better]
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*Type B Outcomes. These are likely constructions, to be refined with exploratory analysis.

3.4 Treatment effects

We compare three types of treatment specifications on the follow-up outcomes.

We assess the effect of having receiving either of the two salience interventions in the lab-in-the-field session (i.e., any treatment or “T.Psych”) (n=1,332) to the control condition which received no additional treatment (n=1,296). This randomization is stratified at the group level. The other comparisons of interest are the effects of being randomized to one of the two types of treatment, the personal initiative (“T.Personal”) or the interpersonal initiative (“T.Interpersonal”) independently versus control.

The second effect of interest is the effect of saturation level of treatment (25/50/75 percent, “T.Sat”) within a business and life skills training group (n=108 groups). We assess the effect of 50% saturation versus 25% (“T.Sat.50”) and 75% versus 25% (“T.Sat.75”). This treatment is randomized at the group level.

3.4.1 Primary models

1. Impact of the psychosocial salience interventions

We run ordinary least squares regression to assess the effect of any treatment, compared to control, on the outcome measures specified above (Y_i). We control for the vector of stratification variables (i.e. include randomization strata fixed effects). We use standard errors clustered at the group level.

(1)

$$Y_i = \beta_0 + \beta_1 T.Psych_i + \gamma_0 X_i + \varepsilon_i$$

We also compare the effects of each of the two salience treatments relative to the control in a similar model, as follows:

(2)

$$Y_i = \beta_0 + \beta_1 T.Personal_i + \beta_2 T.Interpersonal_i + \gamma_0 X_i + \varepsilon_i$$

2. Impact of group-level treatment saturation

We run ordinary least squares regression to assess the effect of level of group saturation level (50% vs 25% and 75% vs 25%) on the individual participation outcome Y_i . We will control for the vector of stratification variables (X_i), specified below. We use standard errors clustered at the group level.

(3)

$$Y_i = \beta_0 + \beta_1 T.Sat.50_i + \beta_2 T.Sat.75_i + \gamma_0 X_i + \varepsilon_i$$

The following variables will be included in the X_i vector in models 1, 2 and 3 as the stratification variables

- Timing (Early/Late)
- ASP treatment arm (Complete/Social)

3.4.2 Robustness and heterogeneity analysis

Heterogeneity analyses

We run models 1, 1a, and 2 above, assessing heterogeneity as follows:

(1a)

$$Y_i = \beta_0 + \beta_1 T.Psych_i + \gamma_0 X_i + \delta_0 x_i + \delta_1 T.Psych_i x_i + \varepsilon_i$$

(2a)

$$Y_i = \beta_0 + \beta_1 T.Personal_i + \beta_2 T.Interpersonal_i + \gamma_0 X_i + \delta_0 x_i + \delta_1 T.Personal_i x_i + \delta_2 T.Interpersonal_i x_i + \varepsilon_i$$

(3a)

$$Y_i = \beta_0 + \beta_1 T.Sat.50_i + \beta_2 T.Sat.75_i + \gamma_0 X_i + \delta_0 x_i + \delta_1 T.Sat.50_i x_i + \delta_2 T.Sat.75_i x_i + \varepsilon_i$$

where x_i is a dichotomous dimension of heterogeneity and δ_j identifies the heterogeneous treatment effect.

We assess heterogeneity by timing of ASP trainings (Early/Late) and having seen sensibilization film or not.

Control variables

We test robustness of models 1, 2, and 3 to the addition of imbalanced control variables (see list under “Internal validity” and other variables, e.g. having seen sensibilization film, commune, household size, baseline gender attitudes at the village level, distance from Niamey, institutional access, living outside a village, individual vs collectivism at the village level) and of enumerator fixed effects.

3.5 Additional exploratory analysis

We expect that there will be heterogeneous effects on the treatment outcomes, including collectivistic vs individualistic orientations at the village level, restrictive vs more liberal gender attitudes at the village level, living close to the capital versus far. We have a more exploratory approach with additional heterogeneity analyses and mediation analyses, and exploratory analyses will be corrected for multiple hypothesis testing.

4 Variable construction

4.1 Index Construction

We construct z-score indices standardized to the control group's means and standard deviations. We will consider weighting items by their factor score on the primary factor in the control group, and if a component factors in the opposite direction as hypothesized, it is set to zero.

4.2 Winsorizing

Unconstrained continuous variables including monetary estimates and number of social connections are winsorized at the 98th (and 2nd where relevant) percentiles, at the most disaggregated level feasible.

4.3 Cleaning and outliers

In our primary models, we conduct an available case analysis after (a) imputing the means of non-missing variables for continuous missings variables or (b) adding a category for missingness for categorical variables in the case that these variables have a low amount of missings or refusals (e.g. <5%), and we add a control variable for "count of missings." For variables that have a known missingness mechanism, we add a category for the missingness and interact it with a dummy variable for not applicable. For variables that have a non-trivial amount of missings or refusals, we conduct sensitivity analyses that set missing values to conceptually-consistent categories where possible (e.g. crediting God for one's success will be defined as external compared to an internal reason for success).

Note on timing of pre-analysis plan

This pre-analysis plan is lodged after data collection. CT conducted the high frequency checks during data collection. Descriptive measures (variables added at the end of the survey to describe the sociocultural context and implementation) have been examined. The treatment assignment variable is stored separately from the follow-up outcome data and will only be merged in the data after the PAP has been filed.