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policy analysis on growth and employment

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The Impacts of Access to Free Childcare on Women's Labor Market Outcomes and Children's
Development and Health

PIERI EVALUATION PROPOSAL

Presented to

Partnership for Economic Policy (PEP)

By

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MONGOLIA

30 June 2017

Before you begin

Please consult the following webpages/documents regarding PEP's expectations in terms of:

- Specific policy issues to be addressed by projects supported under this call
- [Scientific content of eligible research project proposals](#)
- Initiatives to be undertaken by PEP supported research teams in terms of policy outreach

Please note that:

- Plagiarism is strictly forbidden – see note on “references and plagiarism” at the end of this document/template. PEP will be using software to detect cases of plagiarism.
- PEP encourages applicant research teams to submit proposals in English, but content (in text boxes below) may also be written in French or Spanish (and will be accepted given proper justification of language barrier).

policy engagement/impact. The PEP proposal template is structured around these three dimensions. Each section must be completed with due care and attention, as they are reviewed individually and concurrently to assess the overall quality of a proposal.

Please do not exceed the number of words limits. Failure to do so indicates unwillingness to abide with PEP rules and will penalize the overall project.

SECTION I – RESEARCH

1. Introduction

1.1. Abstract (max. 250 words)

The abstract should state the main research question, the context and its relevance in terms of policy issues/needs in relation to PAGE thematic focus, complete with a brief description of the data that will be used.

We proposed to study the short run impacts of universally free public childcare services on maternal labor market outcomes and children's cognitive development and health in Ulaanbaatar, the capital city of Mongolia. Our proposed evaluation falls into the theme of women empowerment. There is also an urgent need to study the impacts of childcare services on women's labor force participation and employment in Mongolia, especially in UB.

Women's labor force participation is lowest in Ulaanbaatar compared to other regions. In 2015, women's participation rate in Ulaanbaatar was 46.6, which is 8.8 percentage points lower than the national average. Childcare is the third major reason for inactivity among women after pension and study. In 2015, 18.6% were inactive due to childcare. The newly elected Mayor of Ulaanbaatar set a target to increase employment rate to 60 percent by 2020. Results from our proposed evaluation can provide useful policy alternative to achieve this new goal.

The team will take advantage of the public lottery for the registration for publicly provided childcare services. From 2016, all public childcare services in UB started using public lottery to recruit the new children (2 year olds) in order to solve the long queue for childcare services. We will measure the impacts based on data collected from 3450 households (2300 in treatment group and 1150 in control). These households will be families of 2 year olds who will be registered to 65 randomly selected childcare centers (32% of the total childcare center in UB) in UB.

1.2. Evaluated Intervention and Context (max. 500 words)

Briefly describe the context in which the program takes place. E.g., for a job training program, describe current supply and demand for jobs, how these compare to other places and other periods; major market frictions and issues facing employers/job seekers; alternative and previous programs. Then describe extensively the program that you intend to evaluate. What are the objectives of the program? What are the program benefits? What are the program eligibility rules? Who is in charge of implementing the program or delivering the benefits? Who is in charge of funding? How are benefits delivered? Indicate whether the intervention/programme has already started, whether in pilot or at scale and give a brief and a timeline for the roll-out of the interventions.

In recent years, a childcare service market is expanding rapidly in Mongolia. During the last five years, the number of childcare centers has increased by 53.5%, while the number of children enrolled has increased by 43.3%. Traditionally, the Government of Mongolia was the sole supplier of the service. Hence, the Pre-School Education Program (PSEP) has its root from the former socialist system. In recent years, the private sector has become an important provider. In 2010, the share of private sector was 13.9%. However, in 2015, it has increased 2.6 times and became 35.9%.

PSEP is one of the most important programs of the Government of Mongolia. According to the Ministry of Education, Culture and Science, the PSEP has objectives to improve children's cognitive skills, communication skills and to develop habits related to healthy living style.¹ Following the Law on Education, the PSEP is designed for children aged between 2-5 years and it offers universally free childcare services across Mongolia throughout the academic year from September to May. More specifically, during this period, childcare centers operate 5 days a week from 9:00 am to 5:00 pm.

The state is still the dominant provider of childcare services. In 2015, there were 826 state owned (public) childcare centers across the country, which constitutes 64.1% of the total. In 2015, total budget for preschool education was 299.8 billion MNT (USD 150 million) and 196.6 thousand children were enrolled in public childcare centers.

In Ulaanbaatar² (UB), the Metropolitan Education Department (MEDUD) is an implementing agency of PSEP. In 2015, there were 204 public childcare centers in UB. Public childcare service centers should enroll only the children from an eligible district. According to MEDUD, in 2015, budget for preschool education was about 94.3 billion MNT (USD 47.1 million) and 62.8 thousand children enrolled in public childcare centers. On average, less than half of the eligible children are enrolled. However, in ger-area enrollment in free childcare services is even lower. In 2014, in peri-urban areas (ger-area) of UB there were 37 khoroo³ that have no kindergartens or pre-school facilities.⁴

Private childcare is quite different from public childcare at least in four respects. First of all, children of different ages tend to be mixed in a single class in private childcares whereas children with same age are allocated for a class in public childcare centers. Second, the average class size is 20.7 children in private centers while it is more than 40 children in public childcare centers. Third, according to the World Bank report on Pre-Primary Education in Mongolia 2015, teacher turnover is highly frequent in private childcare. Hence, teacher-student relationship seems to be less stable in private childcare centers than the situation in public childcare centers. Finally, children in private childcare tend to switch from one kindergarten to another with average stay of 15.3 months in each kindergarten, compared to 25.2 months in public childcare centers. In particular, this period is much shorter for private childcare centers in ger areas with average stay of 12.8 months while this period is slightly

¹ <http://www.meds.gov.mn/сөб-ийн-танилцуулга>

² Ulaanbaatar is the capital city of Mongolia.

³ An administrative unit within a district. Ulaanbaatar has 154 khorooos.

⁴ Analysis of the Situation of Children in Mongolia, 2014, United Nations Children's Fund (UNICEF)

higher in non-ger areas with average stay of 17.4 months.

Private centers charge, on average, 180'000-360'000 MNT per child per month. However, they also receive annual subsidy of 805'000 MNT (equivalent to 335 USD) per child from the government. This subsidy is ought to be disbursed on stationary, teachers' salary and tax.

In the last 5 years, the share of young children in a population has increased by 2.1 percentage points from 11.1, which was the average in 2001-2010. On the other hand, women's labor force participation has decreased dramatically. In the last 5 years, women's participation rate has fallen by 5 percentage points from 61.7, which is the average in 2001-2010. In 2015, women's participation rate in Ulaanbaatar was 46.6, which is 8.8 percentage points lower than the national average.⁵

There are eligibility criteria for children in terms of residential status and age (i.e. in 2016, children born in 2014 were eligible to apply) to apply for public childcare services. Additionally, about 20% of available slots can be allocated to children who are from one of the following target groups: very poor households, households with disabled parents, households with 2 or more children aged between 3 and 6 but none of them had an opportunity to receive public childcare service.

Traditionally, free slots in public childcare centers were allocated on a first come first served basis. However, in recent years, demand for childcare service has increased dramatically in UB and the long queues outside these centers raised a lot of issues. Hence, in 2015, MEDUD experimented a lottery at 30 public childcare centers in six districts. As childcare service managers and MEDUD officials found the public lottery to be fair and making registration process smooth, in 2016 lottery was introduced to public childcare centers in UB.

At the end of a registration for 2016/2017 academic year, a public lottery was conducted at public childcare centers under the monitoring of a representative board which consists of parents, childcare center representatives, and officials from MEDUD. We will take advantage of this public lottery for evaluation of PSEP in Ulaanbaatar.

Currently, MEDUD is working on a project to introduce an online registration process. Although, the online registration was approved by UB governor's office, the details of registration process and public lottery are still in discussion.⁶

1.3. Research gap (max. 400 words)

Clearly lay out the research questions that you aim to address with the RCT methodology. Explain whether the program has been evaluated before and if your research question has been addressed before in similar contexts or using different techniques (cite key references, i.e., references offering literature reviews on similar research questions as well as references to previous evaluations of the same program or of similar programs in other contexts). Explain how your evaluation will contribute to closing any remaining knowledge gap and what you wish to achieve by investigating your research question.

We propose to evaluate the impact of free public childcare service on women's labor market outcome, children's well-being and health in UB. We will use RCT methodology on the observations from UB. Our proposed research has the following new features, i) measuring the effect of universally free childcare policy by RCT ii) a new evidence from a developing country, that would be substantial

⁵ Labor Force Survey Report 2015, National Statistical Office

⁶ Meetings with MEDUD official, Division Head of Ministry of Education and academic secretary of Education Institute (June 27-29, 2017).

contribution to existing literature on socioeconomic impacts of publicly provided childcare system.

There is growing interest in universal subsidies in pre-school education in OECD countries. Although, there are some studies on the impact evaluation of childcare services on mother's labor market outcomes and children's learning outcomes in OECD countries, evidences from developing countries are limited. Barros et al. (2011) studied the impact of publicly provided free childcare services in the low income neighborhoods of Rio de Janeiro, Brazil. The program used a lottery to select children for free childcare services. They found an evidence on increase in the use of care (from 51 to 94%), a considerable increase in maternal employment (from 36 to 46%).

Lundborg, Plug and Rasmussen (2017) estimated the causal effect of having children on women's career using an innovative instrumental variable, IVF (in vitro fertilization). They found negative, large, long-lasting effect on earnings, driven by fertility effects on hourly earnings. Although a fertility effect on labor supply is negative in the short run, the effect is insignificant in the long run.

Baker et al (2008), Lefebvre and Merrigan (2008) and Brodeur and Connolly (2013) studied the effect of universally subsidized daycare on maternal labor supply, family well-being, parental well-being and children's well-being in Quebec, Canada. In these studies, they used difference-in-difference analysis to compare differences in outcome variables in time periods (before and after the reform) and locations (Quebec and the rest of Canada). Baker et al (2008) and Lefebvre and Merrigan (2008) found substantial positive impact on labor supply and income. On the other hand, there are evidences on negative effects of subsidized daycare on subjective well-being of parents and children (Baker et al (2008) and Brodeur and Connolly (2013)). These authors admitted that their identification strategies have disadvantages as they cannot detect if there is any Quebec specific shock coincident with new family policy (Baker et al (2008)) and they use only one treatment group which can lead to inconsistent estimates of policy effect (Lefebvre and Merrigan (2008)).

Furthermore, Baker et al (2008) argued that more evidence is needed to adopt the program elsewhere and future study needs to be considered on wider range of cognitive development indices for more heterogeneous populations of children.

Our research can make a contribution to the field by measuring impacts of universally free childcare service on maternal labor supply, family income, children's well-being and cognitive development by RCT. An evidence from another country (developing and Asian) is always a useful addition.

1.4. Theory of Change (max. 400 words)

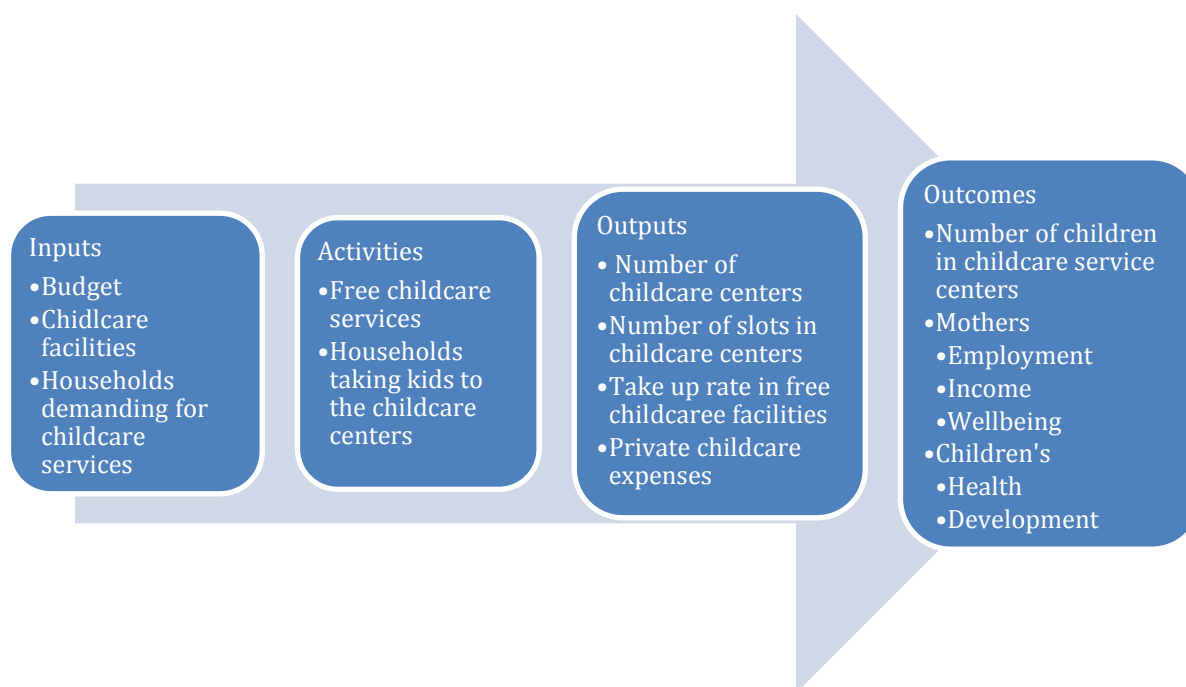
Impact evaluations take root in a program's theory of change (see manual [link here](#)). Outline how the evaluated intervention will achieve the intended results. Describe the causal logic (the chain of events) of how and why the program or policy will reach its intended outcomes. What are the main barriers that could lead the program fails to achieve its objectives?

The Pre-School Education Program (PSEP) of the Government of Mongolia has its root from the former socialist system and provided universally free childcare services countrywide. After the transition to a market economy, the government has kept (PSEP) and maintained its service fees from very low subsidized fee to completely free of charge. Currently, PSEP offers universally free childcare services. According to the Ministry of Education, Culture and Science, the PSEP has objectives to improve children's cognitive skills, communication skills and to develop habits related to healthy

living style.⁷

The program's theory of change is outlined in Figure 1. The government finances the budget and supplies childcare facilities for PSEP, which provides universally free childcare services. PSEP provides childcare services free of charge. The output of PSEP in UB can be measured with number of childcare centers, number of slots in childcare centers. This in turn results in outcome, which can be measured with number of children enrolled in public childcare centers.

Figure 1: Theory of Change



According to the previous theoretical and empirical studies on the impacts of daycare program, we expect impacts on two main groups: women (mothers) and children. The free childcare services provided by PSEP, should reduce barriers to labor force entry and generate economic opportunities for women. Thus, we expect an impact on maternal employment and work hours. This in turn will have an impact on family income. Higher income may in turn result in increased (subjective) wellbeing/happiness and empowerment of women.

As publicly provided childcare services are free of charge, the program will increase enrollment of children in pre-school education. This will have an impact on children's cognitive and communication skills. Moreover, public childcare centers have certain standards for food and nutrition. Hence, it will have an impact on nutrition and health of children from low income households.

In Mongolia, publicly provided childcare services are dominant in the market. Hence, it may have a crowding out effect on private provision. The quality of childcare service is crucial for children's health and skill development. Universally free childcare may make enforcement of standards costly and challenging and may result in low quality service. These may prevent the PSEP to achieve its objectives and lessen its impacts on women and children.

1.5. RCT Methodology (max. 400 words)

⁷ <http://www.meds.gov.mn/сөб-ийн-ганилцуулга>

Describe the randomization process that you intend to implement to assign units to the treatment and control groups. Very often, randomization will only occur in a limited geographical location because of implementation or political constraints. How large is the geographical location that you will use to conduct the RCT? How many villages/districts? What is the size of these primary units? How large is the population (number of villages/districts, number of individuals/households)? Justify based on available (census or administrative) data. Often enough, randomization happens at an aggregate level (we then talk of cluster randomization). Clearly state:

- unit of analysis (household, individual)
- randomization level (village, district),
- if you plan to stratify and with respect to which factors,
- any other particularities or innovations of your randomization process.

The team will conduct the RCT project in Ulaanbaatar (UB), the capital city of Mongolia. The total area of Mongolia is 1564.1 thousand square km out of which the area of Ulaanbaatar (UB) is only 4.7 thousand square km. However, UB is the social economic center of Mongolia and almost half of the population of the country resides in UB. According to the statistical data from National Statistical Office (NSO) of Mongolia, in 2015, the total population of Mongolia is 3.06 million and 1.4 million of them reside in UB. UB population has been expanding rapidly. During the last decade, the population has increased by 37.4%.

UB city is divided into 9 districts and further into 152 khoroo. Khoroo is the primary unit of the city. According to Statistics Department of UB (SDU), in 2015, total number of households in UB is 376419. Number of households for each district and each khoroo varies depending on the area. Six of the 9 UB districts are the most populated (almost 95% of the UB population) main districts as they are located in central UB and three of 9 districts are suburban area and least populated (5% of the UB population).

Traditionally, the slots in public childcare centers were allocated on a first come first served basis. However, in recent years demand for public childcare centers expanded dramatically in UB and long queues outside these centers raised a lot of issues. Hence in 2015, MEDUD experimented a lottery at 30 public childcare centers in six districts. As childcare service managers and MEDUD officials found out the public lottery is fair and makes registration process smooth, lottery was introduced in all childcare services starting from academic year of 2016.

Given the nature of the proposing project, randomization units will be households with 2 year old kids registered for publicly provided childcare services. The team will take advantage of the public lottery for the registration for publicly provided childcare services. According to the registration process, all parents who want to send their children to public childcare services register their kids at their local childcare services⁸. Every parent is given a number for lottery after submitted the required documents. Registration takes place on the same days of late August of each year. It usually continues for 3-4 days. At the end of the registration, childcare service managers run public lottery and recruit kids.

2. Data requirements

This is a critical part of the proposal. The key objective is to show your ability to collect sufficient data to detect an impact.

⁸ In UB city, only one public childcare is available for each child. It is impossible that one child can be registered to more than one public childcare service.

We will conduct a survey to collect required information. The survey form will be prepared in the SurveyCTO platform and interviewers will use mobile software (SurveyCTO Collect) in their phones, tablets, or computers to collect data.

With regards to data collection method, we will employ an interviewer-assisted method. Interviewers assist parents/guardians of 2 years old children who are selected either in the treatment or control group when completing the survey questionnaire. Interviewers expect to find parents/guardians at their place of residence or kindergarten.

In order to collect data with sufficient quality, we will organize trainings for the interviewers/enumerators prior to the start of data collection.

2.1. Outcome variables (max. 200 words)

Briefly describe your primary outcome variable and two secondary outcomes that you plan to measure. Mention for which outcome power calculations will be conducted.

For each outcome:

- describe the corresponding variable and its unit of measure,
- state its nature (continuous, binary, multinomial, ordered, etc.)
- describe the data source for each outcome (self-reported survey or census data, observational measure by enumerators, institutional records such as bank records or tax records, administrative data, etc.)

We will measure impacts of PSEP using the following outcome variables: Maternal employment, maternal earnings, children's development, children's health.

Maternal employment

This is binary variable, which takes 1 for an employed mother and 0 otherwise. If a person worked a positive hours in the previous week, we define her as employed. This is a self-reported data.

Maternal earnings

This is a positive continuous variable, which provides earnings in the last month. This is a self-reported data.

Children's health

Children's health will be measured by health related questions in the self-reported survey which will be answered by parents/guardians of children. Questions are drawn mainly from the National Longitudinal Survey of Children and Youth (NLSCY) of Canada and WHO health questionnaire.

Children's development

Children's development will be measured by Strengths and Difficulties Questionnaire (SDQ) for 2-4 years old children. Questions will be answered by teachers and parents/guardians of children based on their observation.

2.2. Sample size (max. 400 words)

Provide an approximate value and discuss the following factors that will determine the sample size required for your evaluation:

- expected baseline levels for the outcome variables,
- expected effect size of the program or intervention for each outcome,
- if relevant, expected take-up rates,
- if relevant, expected attrition in the treatment and control group
- number of units used for the evaluation (sample size)
- if different from the unit of analysis, number of randomized units
- if relevant, expected correlation of units within a randomized cluster with respect to the outcome variables.

In UB, demand for childcare service is expanding rapidly due to its population growth. In recent years, private sector provision expanded rapidly to meet the demand. According to MEDUD, private childcare service centers constitute 64% in UB. In 2015, 19.3 thousand 2-year old children enrolled in childcare centers, which is about half of the total number. As PSEP provides childcare service free of charge, demand for public childcare service is very high.

Previous studies on the impact of childcare program provide considerable impacts on women's labor force participation. Women's labor force participation is lowest in Ulaanbaatar compared to other regions. In 2015, women's participation rate in Ulaanbaatar was 46.6, which is 8.8 percentage points lower than the national average. Childcare is the third major reason for inactivity among women after pension and study. In 2015, 18.6% were inactive due to childcare. The newly elected Mayor of Ulaanbaatar set a target to increase employment rate to 60 percent by 2020. It means an increase of 13.4 percentage point from its level in 2015.

According to the MEDUD, in 2015 there were 204 public childcare centers in UB. In order to improve precision and to use information on childcare center service quality, we will randomly choose childcare centers first and then randomly choose children. We will randomly select 75 childcare service centers from public nurseries in UB. Hence, the study will cover 36% of the public childcare centers in UB.

Employment rate as a key outcome variable of the program. According to the Labor Force Survey of the National Statistical office, in 2014, participation of women with 2 year old children was in Ulaanbaatar was 0.49 and the standard deviation is 0.5. We want to detect an impact of 7.4 percent increase in employment rate, which provides an expected effect size of 0.148. Two third of children will be allocated to treatment group and one third will be allocated to control group. Moreover, we have additional 4 outcome variables for the study and the sample size need appropriate adjustment. Given these parameters and power of 80%, we have a sample size of 1800 households with 2 year old children.⁹

2.3. Power Calculations (max. 400 words)

Use the information above to compute power calculations for your evaluation. Explain how many units you will use to estimate the impact of the program. In order to conduct proper power calculations please consult [Duflo et al. \(2007\)](#), [3ie manual \(2016\)](#) and [List et al. \(2010\)](#).

The team will take advantage of the public lottery for the registration for publicly provided childcare

⁹ Sample size was computed using 3ie manual "Power Calculation for Casual Inference in Social Science: Sample size and minimum detectable effect determination", March 2016, 3IE.

services. As PSEP selects 2 year old children using a lottery, our evaluation will be individual level randomization. Due to rapidly increasing demand for childcare service in recent years, the number of registered children always exceeds available slots by 30 to more than 200 percent.¹⁰ However, the percentage of exceeding number of children per childcare service depends on the density of population of local area and the capacity of the nursery. Hence, the team will have a ratio of 2:1 between treatment and control group size.

We choose the maternal employment rate as a key outcome variable of the program and we want to evaluate the impact of public childcare services on employment of women in UB city. As mentioned above, we will use two stage random sampling. Sample size of 1800 and the effect size of 0.15 provide a statistical power of 80%. However, this will be true for the case with full compliance. Non-compliance such as no-show, drop-out and control contamination may cause selection bias and hence may threaten internal validity.

On the one hand, lottery winners or children who enrolled in free childcare service may not show up. However, average take up rate is high as the program is free. Being conservative, we expect take up rate of 85%. On the other hand, lottery losers who could not enroll may find a way (corruption) to enroll and this will contaminate the control group. Although, this is illegal, we will be conservative and assume 13% control contamination. Adjusting the sample size accordingly, we end up with a sample size of 3450. In case of full compliance, it has a statistical power of 92%.

Baseline data will be collected during the registration. Once childcare services recruit their children by the lottery, about 30 kids will be allocated into treatment group and 15 kids will be allocated to control groups. For those nurseries where available slots exceed 30, we will randomly choose from the selected children and allocate them into treatment group. For those nurseries, the registered number of kids exceeds the available slots by more than 30 percent, we will randomly choose children, who are not selected into the nursery and allocate them into control group.

2.4. Baseline (max. 50 words)

Do you plan to collect baseline data yourself?

Yes

No

If not, explain why. Remember that baseline data correspond to information collected before any experimental unit is treated, i.e. before the start of the intervention for your study sample.

Baseline data will be collected during the registration. Registration takes place on the same days of late August of each year for all public childcare services. It usually continues for 3-4 days. At the end of the registration, childcare service managers run public lottery and recruit kids.

2.5. First follow-up (max. 50 words)

How long after the treatment starts are you planning to collect the first follow-up data? Describe the data collection technique for the treatment and the control group (self assessment through a survey, observational measure by enumerators, institutional records such as bank records or tax records, etc.)

We will follow the participants 8 months after the baseline. Same data collection technique will be used for both groups. Surveys will be taken by face-to-face interview. Questionnaires will be used for

¹⁰ MEDUD

children's development and health measurement, and self-assessment questions will be used for mothers' employment, households' and children's well-being. Quality information of childcare services will be collected from MEDUC and attendance records from childcare services will be utilized.

2.6. Second follow-up

Do you plan to conduct a second follow-up?

Yes

No

SECTION II – CAPACITY BUILDING

1. List of team members

Fill the required information for all team members starting with team leader. Note that PEP favours gender-balanced teams, composed of one senior (or experienced) researcher supervising a group of junior researchers, including **at least 50% female researchers**, all contributing substantively to the research project. (Each listed member must post an up-to-date CV in their profile on the PEP website – refer to “[How to submit a proposal](#)”).

Full name	Age	Sex (M,F)	Highest education level & country	Field of expertise	Affiliations (working institution)	Nationalities (all nationalities)	Main country of residence
Altantsetseg Batchuluun	44	F	PhD in economics	Macroeconomics, Labor Market, Policy Impact Evaluation	Department of Economics of National University of Mongolia (NUM)	Mongolian	Mongolia
Soyolmaa Batbekh	38	F	PhD in economics	Development Economics, Labor Market, Policy Impact Evaluation	Department of Economics of NUM	Mongolian	Mongolia
Dulbadrakh Sanduijav	38	M	PhD in economics	Development Economics, Macro Modelling	Department of Economics of NUM	Mongolian	Mongolia
Gantungalag Altansukh	30	F	PhD in economics	Macroeconomics, Time Series Econometrics	Department of Economics of NUM and Development Bank of Mongolia	Mongolian	Mongolia

2. Expected capacity building

Describe the research capacities that team members (and potentially their affiliated institutions) are expected to build through their participation in this project.

This is an important aspect in the evaluation of proposals and should be presented with detail. What techniques, literature, theories, tools, etc. will the team and their institutions learn (acquire in practice) or deepen their knowledge of? How will these skills help team members in their **career development**? What is the current state of knowledge of each team members in regard to the project you are proposing?

Name	Benchmark and expected capacity building
Altantsetseg Batchuluun	<p>Benchmark:</p> <ul style="list-style-type: none"> • Impact evaluation using randomized control trial and extensive experience in data collection and data analysis • Macroeconomic modeling and labor market analysis • MatLab, STATA, EViews, and SPSS <p>Expected:</p> <ul style="list-style-type: none"> • To improve knowledge and skills to apply experimental economic research methodology • To deepen understanding about the socioeconomic problems, child care, child health, women’s employment and income, and their origin and consequences
Soyolmaa Batbekh	<p>Benchmark:</p> <ul style="list-style-type: none"> • Impact evaluation using randomized control trial and extensive experience in data collection and data analysis • Modeling economic growth with poverty, income distribution, microfinance, fertility choice and corruption • STATA, EViews, and CsPro <p>Expected:</p> <ul style="list-style-type: none"> • To improve knowledge and skills to apply experimental economic research methodology • To deepen understanding about the socioeconomic problems, child care, child health, women’s employment and income, and their origin and consequences
Dulbadrakh Sanduijav	<p>Benchmark:</p> <ul style="list-style-type: none"> • Dynamic general equilibrium modeling • MatLab, STATA, EViews, and SPSS

	<p>Expected:</p> <ul style="list-style-type: none"> • Impact evaluation using randomized control trial and extensive experience in data collection and data analysis • Cross-sectional analysis based on the household level data
Gantungalag Altansukh	<p>Benchmark:</p> <ul style="list-style-type: none"> • Time-series analysis for forecasting in the presence of structural break • MatLab, GAUSS, EViews, and STATA <p>Expected:</p> <ul style="list-style-type: none"> • Impact evaluation using randomized control trial and extensive experience in data collection and data analysis • Cross-sectional analysis based on the household level data

Add comments and describe institutional capacity building if applicable.

The capacity building in international research is the priority research strategy of the National University of Mongolia (NUM). Therefore, members of economics department are actively seeking opportunities to enhance their research capacity and bring their researches at international standard. Moreover, by participating in this project, the new junior researchers of the Department of Economics will benefit in many ways, for example, to learn the RCT and to improve their capacity to design experimental economic research and etc.

In Mongolia, we noticed that designs of policies and program implementations are changed very often based on invalid evidence. Once policy makers understand the importance of impact evaluation with RCT, they may have demand for using it to improve the effectiveness of public programs. Local academics with rich experience of program impact evaluations can make it happen by influencing policy makers and disseminating findings of their researches funded by international organizations. PEP funding for RCT project will allow us to strengthen our experience of field experiment and make us available to influence the policy makers.

Indicate which specific tasks each team member would carry out in executing the project.

Name	Task and contribution to the project
Altantsetseg, Batchuluun	<p><i>Team leader,</i></p> <ul style="list-style-type: none"> • Prepare work plan and develop stratification method and survey questionnaires • Guide the data collection effort and oversee its effective implementation • Oversee technical aspects including sampling, interviewer training, data collection, data entry and cleaning, and variable aggregation and descriptive reports • Participate directly in the oversight of fieldwork, through site visits, review of progress and review of primary data • Maintain relationships with PEP-Net, relevant other stakeholders

	<ul style="list-style-type: none"> • Manage budgets and expenses. • Data analysis and estimation • Submit reports according to agreed-upon timeline. • Ensure that appropriate resources are made available and managed in order to achieve the objectives of the contract
Soyolmaa, Batbekh	<p><i>Researcher,</i></p> <ul style="list-style-type: none"> • Prepare work plan and develop stratification method and survey questionnaires • Conduct Pilot survey and revise survey questionnaires • Prepare interviewer manual for survey • Guide the data collection effort and oversee its effective implementation • Handle technical aspects including interviewer training, data entry and cleaning, and descriptive reports • Data analysis and estimation • Prepare reports according to agreed-upon timeline.
Dulbadrakh, Sanduijav	<p><i>Researcher,</i></p> <ul style="list-style-type: none"> • Prepare work plan and develop stratification method and survey questionnaires • Conduct Pilot survey and revise survey questionnaires • Prepare interviewer manual for survey • Guide the data collection effort and oversee its effective implementation • Handle technical aspects including interviewer training, data entry and cleaning, and descriptive reports • Data analysis and estimation • Prepare reports according to agreed-upon timeline.
Gantungalag, Altansukh	<p><i>Junior researcher,</i></p> <ul style="list-style-type: none"> • Conduct Pilot survey and revise survey questionnaires • Handle technical aspects including interviewer training, data entry and cleaning, and descriptive reports • Data analysis and estimation • Prepare reports according to agreed-upon timeline.

3. List of past, current or pending projects in related areas involving team members

Name of funding institution, title of project, list of team members involved. This includes funding from other sources for the current project and for projects related to the current project.

Name of funding institution	Title of project	Team members involved
Partnership for Economic Policy	Assessing the short and medium term impacts of short term vocational training on youth employment in Mongolia, 2013-2016	Altantsetseg Batchuluun Soyolmaa Batbekh
Economic Research Institute	Supply Analysis of Labor Market, 2012	Altantsetseg Batchuluun
Metropolitan Employment Department	Labor Force and Employment Study in UB, 2014	Altantsetseg Batchuluun Soyolmaa Batbekh

NRCC consulting firm/ Japan – Mongolia Center for Human Resource Development	Quarterly Consumer Confidence Index Survey in Mongolia, 2014, 2015	Altantsetseg Batchuluun Soyolmaa Batbekh
Open Society Forum	Consumer Confidence Survey in UB, April and October 2009	Altantsetseg Batchuluun
Open Society Forum	Consumer Confidence Survey in UB, 2010, 2011, 2012, 2013	Altantsetseg Batchuluun
Dissertation	Labour Supply with Information Processing Constraint	Altantsetseg Batchuluun
Micro Finance Development Fund, World Bank	Wholesale Loan Demand in the Microfinance Sector	Altantsetseg Batchuluun
Asian Research Center	The vulnerability to poverty in Mongolia	Altantsetseg Batchuluun Dulbadrakh Sanduijav Soyolmaa Batbekh
The Mongolian Foundation for Science and Technology	Economic Growth: Human Capital and Stabilization Policy	Altantsetseg Batchuluun
Open Society Forum	Annotated Bibliography of Issues on Poverty in Mongolia	Altantsetseg Batchuluun Dulbadrakh Sanduijav
University of Manchester	On the Macroeconomics of Microfinance	Soyolmaa Batbekh
University of Manchester	Red tape, Rent Seeking and the Distribution of Income	Soyolmaa Batbekh
University of Manchester	Intergenerational Transfers, Demographic Change and Income Distribution	Soyolmaa Batbekh
National University of Mongolia	On the relationship between microfinance and the fertility rate	Soyolmaa Batbekh
Open Society Forum	Economic Freedom Index in Mongolia, 2005, 2006, 2008	Dulbadrakh Sanduijav
Open Society Forum	Case Study of Health Sector Privatization in Mongolia	Dulbadrakh Sanduijav
USAID	Business Survey on Commercial Dispute Resolution: Alternative Arbitration Process	Dulbadrakh Sanduijav
National Graduate Institute for Policy Studies of Japan	Essays on the Mongolian Monetary Policy	Dulbadrakh Sanduijav
University of Manchester	What is the Globalisation of Inflation	Gantungalag Altansukh
University of Manchester	Structural Breaks in International Inflation Linkages	Gantungalag Altansukh

SECTION III – POLICY ENGAGEMENT

1. Policy context and needs

Describe the specific policy issues or needs that your research aims to address; how your potential outcomes and findings **may be used in policy making**? Please be as precise as possible, indicating specific current or prospective policies and the specific contributions your research would make.

Also, justify **timing** of your research in terms of policy and socioeconomic **needs** and **context** – e.g. reference to existing, planned or potential policies at the national, regional or local level; specific political context; international examples of similar policy problem or solution, etc.

Currently, Ministry of Education, Culture, Science and Sports (MECSS) aims to improve the environmental quality and teachers' capacity of pre-education in Mongolia. On the other hand, the exceeding demand for public childcare services put a challenge to this task. In particular, this is more challenging to public childcare services in UB as the average number of children in one class is almost 50% higher in UB (45 children) compared to other regions (31 children) of Mongolia. Furthermore, the public cost of the childcare service increased from 67.5 billion MNT (1% in GDP) to 299.8 billion MNT (1.3% in GDP) between 2009 and 2015¹¹. Therefore, impact evaluation of current public childcare system is crucial to consider about budget optimizing and making the program more targeted in order to make the current policy task more feasible.

Currently, there is no evidence on the impact of childcare services in Mongolia. However, policy makers need to have robust and actionable evidences in hand to design and implement effective policy. At the moment, in response to the growing demand for public childcare services in Ulaanbaatar the government slowly expanding its spending instead of active intervention due to a lack of evidence on the cost-effectiveness of the program.

Another policy recommendation that could be provided based on findings from this study is related to women's labor force participation in UB. Newly established city council set very ambitious new goal to increase women's labor force participation rate by more than 10 percentage points (rate was 46.6 in 2015) within 4 years in UB. Labor officials find this goal too ambitious and difficult to reach. One way to increase the women's labor force participation might be encouraging the women who are inactive due to childcare to become active in labor market. It has been shown that universal subsidized childcare substantially increased the mothers' labor supply in Quebec, Canada (Baker et al (2008) and Lefebvre and Merrigan (2008)).

When we studied the impact of public childcare on maternal labor supply, we might be able to identify the right group of women with labor supply sensitive to childcare cost. So we can define what type of households should be more targeted by the free provided public childcare system.

Based on the randomized controlled trial method, this evaluation will provide robust evidence on the impact of free childcare program on women's labor market outcomes and children's cognitive development and health.

1.1. Consultations to date

¹¹ Consumer Price Index of Mongolia is almost doubled between 2009 and 2015 (NSO).

List all (past) consultations with potential research users (e.g. policy makers or stakeholders) that have helped define your research question, and/or informed you of the specific policy context described above. Include a list of names, institutions and email addresses (add rows when needed).

Name	Title	Institution	Email
Mr Tuvshinbat	Deputy director	Metropolitan Education Department	r.tuvshinbat@yahoo.com
Dr Enkhpurev	Director	Mongolian Institute of Education Research	enkhpurev@mier.mn
Dr Sanjaabadam	Senior officer	Mongolian Institute of Education Research	sanjaabadam@mier.mn

1.2. Identify target audiences

Identify potential users of your research findings, including policy makers, advisors and other key stakeholders. Provide a list of institutions and, whenever possible, specific individuals to be targeted for effective policy influence. Please also indicate whether you have already made contacts within the institutions (add rows when needed).

Name	Title	Institution	Email
Mr Myagmar	Director of pre-school education and primary education division	Ministry of Education, Science and Culture	
	Division of Family and Women Development	Ministry of Labor and Social Welfare	
Mr Tuvshinbat (contacted)	Deputy director	Metropolitan Education Department	
Dr Sanjaabadam (contacted)	Senior Officer	Mongolian Institute of Education Research	
Mongolkhatan	Officer, research of pre-school education	Mongolian Institute of Education Research	
Ms Oyungerel (contacted)	Deputy Director	Metropolitan Employment	

		Department	
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1.3. Define outreach and engagement strategy

How, from proposal design to the dissemination of your research results, will you consult and communicate with these users to both gather their inputs and keep them informed of your project, in order to increase chances of research uptake? You can refer to PEP’s research communications strategy and guidance to have a better idea of what is expected in terms of activities for policy outreach and dissemination.

The research team will be engaged and communicated continuously with the key users/stakeholders during the implementation period of the project. The team will use various types of communication methods including advisory meetings, workshops, academic discussion seminars, national and international research conferences and media.

At the beginning of the project, the team will organize a workshop among key partners to inform about the research project and to consult about their inputs in the project. During the workshop, the team will discuss about importance of impact evaluation and expected results from the project. During the project, the team will organize series of advisory meetings, workshops among key stakeholders to inform them about the progress of the project and potential problems to be solved.

Final results will be disseminated through various channels. We will organize national conference and distribute policy briefs during this conference. Also results will be presented at international conferences and research workshops.

We are planning to publish the research on a peer reviewed journal.

1.4. Outline your preliminary dissemination strategy

Identify potential and relevant communication channels (e.g. direct stakeholder meetings, conferences, media/press, web platforms, etc.) through which you will be able, or attempt, to communicate and disseminate your research and research findings.

Name	Title	Institution	Email
Dr Sanjaabadam	Senior officer	Mongolian Institute of Education Research	
Ms Oyungerel	Deputy director	Metropolitan Employment Department	
Ms Bayarmaa	Senior researcher	Ministry of Labor and Social Welfare	

Outline your preliminary dissemination strategy. Note that PEP expects grantees to disseminate information about their research work and (expected) outcomes throughout the project cycle, and not only after publication.

We will disseminate information about our research work and results through media (newspaper, TVs), social media, advisory meetings, national and international conferences.

1. Preparation stage
 - a. Advisory meetings with stakeholders
 - b. FB page on project
 - c. TV and newspaper interviews whenever possible
2. Implementation stage
 - a. Advisory meetings with stakeholders to inform about project implementation
 - b. Keep posting on FB page about interim results and implementation progress
 - c. Presentation at research seminars and national, international conferences
 - d. TV and newspaper interviews whenever possible
3. Final results dissemination
 - a. Advisory meetings with stakeholders to inform about project implementation
 - b. Presentation at research seminars and national, international conferences
 - c. TV and newspaper interviews whenever possible
 - d. Policy brief
 - e. Working paper

SECTION IV – OTHER CONSIDERATIONS

1. Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project.

The survey will use informed consent, which is consistent with existing laws and rules on ethical social, gender and environmental issues. The team will carefully prepare the informed consent according to the statistical law and current guidelines. Each participant will sign the contract to participate in the survey after giving their informed consent.

1.1. Ethical approval

Does your institution have an Institutional Review Board in order to provide Ethical Approval for conducting the RCT?

Yes No

If yes, you will be asked to submit the relevant documentation when needed. If not, the project will be reviewed by PEP's ethics committee.

1.2. References and plagiarism

Applicants should be very careful to avoid any appearance of plagiarism. Any text of three or more consecutive words that is borrowed from another source should be carefully contained between quotation marks with a reference to the source (including page number) immediately following the

quotation. It is essential that we be able to distinguish what you have written yourself from what you have borrowed from elsewhere.

Note also that copying large extracts (such as several paragraphs) from other texts is not a good practice, and is usually unacceptable. For a fuller description of plagiarism, please refer, for example, to the following website:

- <http://writing.yalecollege.yale.edu/advice-students/using-sources/understanding-and-avoiding-plagiarism>

PEP will be using software to detect cases of plagiarism.

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17. Labor Force Survey, National Statistical Office, Mongolia, 2007.
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SECTION V – Timeline and Budget

1. Budget allocation

PEP will provide a closed budget of \$100,000 US to the selected teams to undertake an experimental evaluation. Provide a detailed budget allocation¹² of the evaluation.

Summary Budget

Use the provided forms to illustrate your plan. The listed items are indicative; add any required explanation and items to the table. Remember to take into account overhead costs, withholding taxes and other expenses indirectly related to the research activity.

BUDGET

ITEMS		Estimated cost in US\$
Cost for preparation stage		37,850
	workshop & meeting	2,000
	piloting of baseline questionnaires and test	2,600
	enumerators training	3,000
	compensation for enumerators	13,000
	compensation for participants	17,250
Follow up survey 1 cost		38,450
	piloting of follow up questionnaires and test	1,200
	enumerators training	2,000
	compensation for enumerators	13,000
	compensation for participants	17,250
	tracking cost	5,000
Data entry		2,600
	compensation for data entry staff	2,600
Staff		12,000
	Research staff	12,000
Administrative cost		5,600
	office space rent	2,100
	transportation cost	1,500
	communication cost	1,000
	stationary cost	1,000
Workshop & dissemination		3,500

¹² Describe in detail data collection costs.

	Meetings with stakeholders on the results	500
	National conference	3,000
Sub total requested from PEP		100,000
From other sources		
1. Follow up 2 cost		38,450
	piloting of follow up questionnaires and test	1,200
	enumerators training	2,000
	compensation for enumerators	13,000
	compensation for participants	17,250
	tracking cost	5,000
2. Data entry of follow-up 2		1,300
3. Research staff		6,000
Sub total from other sources		45,750
TOTAL		145,750

1.1. Other funding sources

Does your team have other sources of funding for this evaluation?

Yes

No

2. Timeline

All teams should complete their evaluation by late 2018. Use the provided forms to illustrate your timeline. The listed items are indicative; add any required explanation and items to the table.

The timeline includes all the activities related to implementation of RCT. A detailed timeline is shown in the following tables. According to timeline, the preparation for RCT will start on July 1, 2017. At preparation stage, the team will do the followings:

1. Organize workshop and meeting among key partners and officials,
2. Develop draft of baseline survey questionnaire and child health and cognitive measurement tests, and
3. Prepare for data entry process

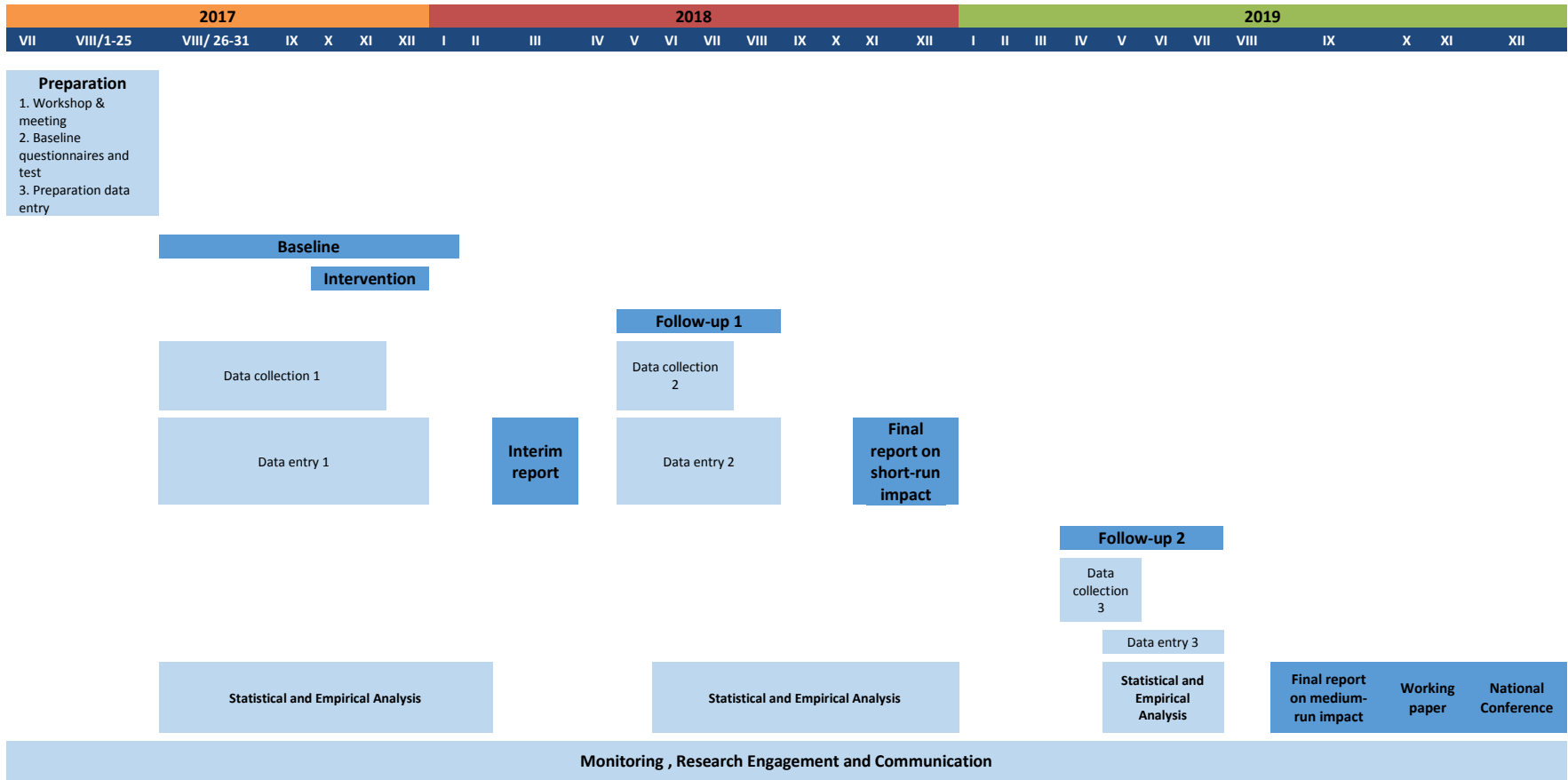
During the registration and lottery period of early childcare centers of Ulaanbaatar, between 26-31 August, 2017, the baseline survey will be conducted and in September, 2017, the team will observe the data that related to child of control group. Following this, data entry processes will be undertaken.

The first follow-up survey will be organized between May and August, 2018 and the second follow-up survey will be conducted from April, 2019 to July, 2019. During each follow up survey, the data entry process and data analysis will be implemented. After each data collection and entry process, the team will prepare descriptive reports and documentation of the data sets.

The team will conduct data analysis after each data collection and prepare the reports based on analysis. There will be a report on baseline data and reports on short run impact and medium run impact. Moreover, team will publish working paper and submit it to a peer reviewed journal. Finally, the team will organize the national conference in order to disseminate the main results to the public and stakeholders.

Timeline for Baseline Survey

Activity	Responsible	2017							2018
		Jul	1-25 Aug	26-31 Aug	Sep	Oct	No	Dec	Jan
Preparation									
1. Workshop and meeting									
Metropolitan Education									
District officers for early									
Managers of early childcare									
2. Baseline questionnaires and test									
Revision of draft baseline									
Revision of draft of child									
Revision of draft child									
Pilot survey									
Finalize baseline									
Manual for questionnaires									
Training for enumerators									
3. Preparation data entry									
Baseline									
Intervention									
Data collection 1									
Data entry 1									



PreNote: First activity commences when the fund has been approval. Each column represents a month.