

Allegato 1

Scheda riassuntiva del progetto

Titolo della ricerca

Tertiary Education and Human Development in Rural Cambodia: Exploring the Causal Link

Nome e cognome e affiliazione dell'autore:

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Parole chiave

Human capital, Education, Human Development

Abstract

L'obiettivo della ricerca è di studiare l'effetto diretto e indiretto di un investimento in istruzione terziaria in una zona rurale della Cambogia. Lo studio prevede la valutazione del progetto "Saint Paul Institute", una scuola universitaria sorta nel 2009 a 150 km dalla capitale Phnom Penh. Nello specifico, per effetto diretto s'intendono sia i possibili cambiamenti nel mondo del lavoro dovuti a una maggiore istruzione sia le ripercussioni sulle condizioni di salute degli individui che hanno beneficiato del progetto. Per effetto indiretto, invece, si considerano le ripercussioni sull'household di riferimento (*spillover effects*), in particolare sul livello d'istruzione dei fratelli e sul *working status* dei membri dell'household con particolare focus sulla condizione delle donne. Attraverso una *survey* a livello micro condotta tramite software sperimentali forniti dal Laboratorio di Economia Sperimentale dell'Università di Strasburgo, si intervisteranno direttamente tutti gli studenti che dal 2009 ad oggi hanno preso parte ai programmi del Saint Paul Institute e si raccoglieranno informazioni dirette anche sulla famiglia di origine. Come controfattuale per l'analisi microeconomica ci si sposterà in un distretto rurale con caratteristiche socio-economiche analoghe ma privo di una struttura universitaria simile, Mondol Kiri.

Tabella 1: Tempistica della ricerca

	02-2015	03-2015	04-2015	05-2015	06-2015	07-2015
Literature Review	√					
Survey Preparation		√				
Pilot Project			√	√		
Data Collection				√	√	
Analysis and WP1					√	√

Il dataset che si renderà disponibile sarà in formato *excel* e *dto*. Si tratterà di dati micro a livello individuale da cui sarà possibile ricostruire l'household di riferimento. Si stima un numero di osservazioni pari a 1600.

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Introduzione

Educare. E-ducere. Portare fuori.

Da cosa? E perché? E quindi?

Se intendiamo lo sviluppo come una possibilità di miglioramento, allora l'educazione scolastica gioca un ruolo primario tanto in un contesto socio-economico privilegiato, quanto in un ambiente economicamente più sfavorevole.

Il Saint Paul Institute nasce proprio con l'obiettivo di promuovere lo sviluppo umano, attraverso l'istruzione dei ragazzi, adolescenti e giovani di uno dei tanti distretti rurali cambogiani.

Un'università nel cuore della campagna, a circa due ore dalla capitale Phnom Penh. Una struttura grande e accogliente che svetta tra le basse risaie che circondano l'area.

Fondata nel 2009 dal vescovo della diocesi di Phnom Penh, O. Schmitthausler, è stata sin dal principio una sfida: promuovere l'istruzione terziaria in un paese in cui il livello di alfabetizzazione è molto basso. Un azzardo: perché farlo? E quali potrebbero essere gli effetti?

Questo lavoro empirico si propone di rispondere al secondo interrogativo. Scopo primario della ricerca è, infatti, valutare, e quindi misurare, l'effetto diretto del progetto sugli *outcomes* lavorativi e sull'health status dei ragazzi che hanno frequentato uno dei sei corsi di laurea triennale offerti dall'istituto. Limitare l'analisi agli effetti diretti del progetto è, tuttavia, riduttivo. Altrettanto importanti potrebbero, infatti, essere i cosiddetti "effetti indiretti" sullo status sociale ed economico delle famiglie degli studenti. La teoria economica suggerisce, infatti, che un investimento in istruzione secondaria ha ripercussioni positive sul livello d'istruzione e sul *working status* non solo di chi beneficia direttamente dei corsi offerti ma anche su altri componenti del nucleo familiare e, in particolare, sulle donne.

Attraverso una *survey* a livello micro si intervisteranno direttamente tutti gli studenti che dal 2009 a oggi hanno preso parte ai programmi del Saint Paul e si raccoglieranno informazioni dirette anche sulla famiglia di origine. Come controfattuale per l'analisi microeconomica ci si sposterà in un distretto rurale con caratteristiche socio-economiche analoghe ma privo di una struttura universitaria simile, Mondol Kiri.

Research Project

**Tertiary Education and Human Development in
Rural Cambodia:
Exploring the Causal Link**

Chiara Falco¹, Valentina Rotondi²

1. Motivation and Literature Review

Starting from an original educational project implemented in 2009 in a rural area of Cambodia, this project aims at estimating the direct and indirect effects of tertiary education on human development through a field experiment.

The first step of the analysis will be devoted in finding the direct effects of the participation in a university program on outcomes strictly related to students (i.e. working status, health and wealth); the second step will consider spillover effects at the household level: changes in siblings' school participation and consequences in parents/family members working status. The objective of the analysis is to measure the returns on investment in tertiary education on former students and on their household members.

In general, the literature on human capital and growth confirms, both theoretically and empirically, the importance of education in reaching development through various mechanisms, including increased productivity and literacy (Schultz, 1963; Lucas, 1988; Mankiw et al. 1992).

However, empirical evidence shows conflicting results when the investment concerns primary or secondary education. In fact, on the one hand, primary education reduces fertility rates, improve investment in physical capital, and raise secondary enrolment rates. All these factors are causes of per capita income growth; On the other hand, some (rare) evidence shows that *at the macro level* countries raising enrolment rates in secondary education have experienced a faster economic growth (see among others: Bloom et al., 2006; Caselli and Coleman, 2006; Gyimah-Brempong et al., 2006; Keller, 2008).

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Two recent studies have analysed the returns on education in Cambodia (Sakellariou, 2008; Lall, 2008). Applying conventional econometric techniques, Sakellariou (2008) uses data from Cambodia's socio-economic surveys of 1997 and 2004 and conclude that the higher the educational level, the higher the wage with the return to an additional year of university education as 11% for males and 17.3% for females. With more recent data, Lall found the return to an addition year of university education is 10.6% for males and 11.7% for females. Returns are based on sample population data in 2007, and therefore do not fully incorporate the rapid growth in university enrolments over the past few years.

This project contribute to the literature on human development and tertiary education by means of a field experiment comparing different randomly chosen treatment groups to measure the effects of an investment in tertiary education on students and their families economic and social outcomes in a rural district of Cambodia³ (Duflo, 2006).

2. Context Analysis

2.1 Cambodia overview

Together with Vietnam, Thailand and Laos, the Kingdom of Cambodia (hereafter Cambodia) is one of the South East Asian countries. With a population of over 14.8 million, this constitutional monarchy is characterized by a presence of minority groups, including Vietnamese, Chinese, Chams and over 30 hill tribes, 95% of them is Buddhist.

The history of this country starts with the glorious Khmer Empire during the IX century, as demonstrated by Angkor Wat monumental temples. During the VII century the empire started to decline, since the French arrival. In 1863 Cambodia became a protectorate of France and gained independence in 1953. Then, after the Sihanouk's kingdom, the Sangkum Reastr Niyum (Socialist People Party) was established. Years later the Vietnam War was extended into Cambodia during which the Khmer Rouge took Phnom Penh in 1975 carrying out the Cambodian Genocide from 1975 to 1979. For five years later on, the Cambodian-Vietnamese War definitely destroyed all the country.

After all those dark years, in 1992-1993 Cambodia was governed by UN mission and in 1997 democratic elections voted for the Cambodian People's Party who remains in power as of 2014.

In the last 10 years, Cambodia has had one of the best economic records in Asia, with economic growth averaging 6%. Textiles, agriculture, construction and tourism sectors led to foreign investments. However it remains one of the poorest countries in the world with more than two

³ More details in paragraph 3.1.

million people living in poverty. Cambodia is ranked at 139^o position out of 184^o in the Human Development Index⁴ with a Corruption Perceptions Index of 89,13%⁵. On the side of education (Education Index), it is in the 132^o position out of 179^{o6}.

Figure 1: Kingdom of Cambodia



Source: DHS, 2010. In the blue circle, the district where the University is located while in the green one, the district that we will use as counterfactual.

2.2. Education in Cambodia

Thirty years ago, Cambodia emerged from a brutal regime that resulted in a complete destruction of schools. Since then, rebuilding the country's educational system has been a top priority, and considerable improvements have been made. However, despite these efforts, Cambodia's education sector remains imperfect, due to a limited access to quality instruction, scarce school facilities and high dropout rates. Access to and completion of primary school, in particular, continue to be a social dilemma, with many children as young as 12 years old entering the labour market.

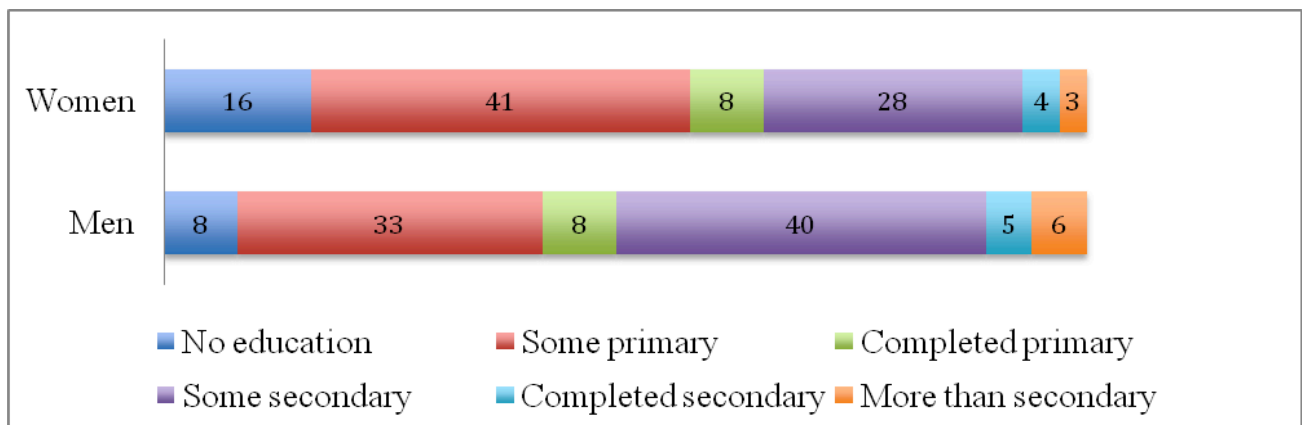
⁴UN Development Programme ranking, 2012.

⁵Transparency International, 2012.

⁶UN, 2012.

In 2008-2012 the total adult literacy rate was 73.9%; restricting the age sample to 15-24 years old, the literacy rate increased at 87.2%. In the 2010/2011 school years, the overall rate of children enrolled in primary school was 95.2% with no significant difference between male and female. However completions rates for primary, and in particular for lower secondary education, are low, especially in rural areas whether the direct and indirect costs related to education are too high. Through the Education Sector Support Programme (2001-2005 and 2006-2010) the Cambodia's government started to consider education as a key priority. Three national policies were set out: i) achievement of equitable access to education services; ii) improving of the quality and efficiency of education; iii) strengthening institutional capacity to deliver on education. Despite these progresses, challenges remain.

Figure 2: Percentage distribution by highest level of education (15-49 sample age)



Source: author's elaboration of Demographic and Health Survey, 2010⁷.

As outlined in Figure 2, the percentage of individuals with more than secondary level of education attained is very low. Overall, tertiary school enrolment rate in 2012 was around 16% with the share of men higher than the one of women.

In Table 1 the educational attainment by provinces. Ordering all provinces from the one with the highest percentage of population with more than secondary educational level of schooling, Takeo is seventh over eighties, while Mondol Kiri is the second last.

Table 1: Educational attainment by provinces

⁷ The 2010 Cambodia Demographic and Health Survey is the third Demographic and Health Survey (DHS) conducted in Cambodia for monitoring the population and its health status.

	No schooling	Some Primary	Completed Primary	Some Secondary	Completed Secondary	More than secondary
Phnom Penh	6,1	30,7	4,75	33,3	7,8	17,35
Preah Sihanouk/Koh Kong	19,9	43,85	4,05	26,4	2,3	3,5
Battambang/Pailin	15	45,65	6,3	27,85	2,15	3,05
Siem Reap	18,45	52,15	5,65	18,8	2,55	2,4
Kampot/Kep	13,9	47,65	6,45	27,75	2,05	2,2
Preah Vihear/Steung Treng	24	52,65	4,05	15,85	1,35	2,1
Takeo	15,1	47,6	7,05	26,65	1,6	2
Pursat	16,95	52,15	5,25	21,55	2,15	1,95
Kandal	11,65	45,2	6,7	31,85	2,65	1,95
Kampong Thom	21,15	51,35	5,3	19	1,8	1,4
Kampong Speu	11,95	48,25	6,2	30,35	1,95	1,3
Banteay Mean Chey	17,65	52,45	4,95	21,7	2,05	1,2
Kampong Cham	20,7	47,05	7,1	22,75	1,3	1,1
Kampong Chhnang	15,8	55,6	6,95	18,9	1,85	0,9
Svay Rieng	19,5	48,6	4,1	25,2	1,8	0,8
Prey Veng	17,45	51,8	5,85	22,65	1,6	0,65
Ordan Mean Chey	20,15	52,75	5,25	19,5	1,7	0,65
Mondol Kiri/Rattanak Kiri	35,5	44,05	4,55	14,3	1	0,6
Kratie	17,1	50,95	7,05	21,6	2,8	0,5

Source: author's elaboration of Cambodian DHS 2010

Therefore, taking into account the fact that also primary and secondary school levels should be improved, a huge effort should be done on tertiary education, almost absent in all country, with the exception of Phnom Penh province.

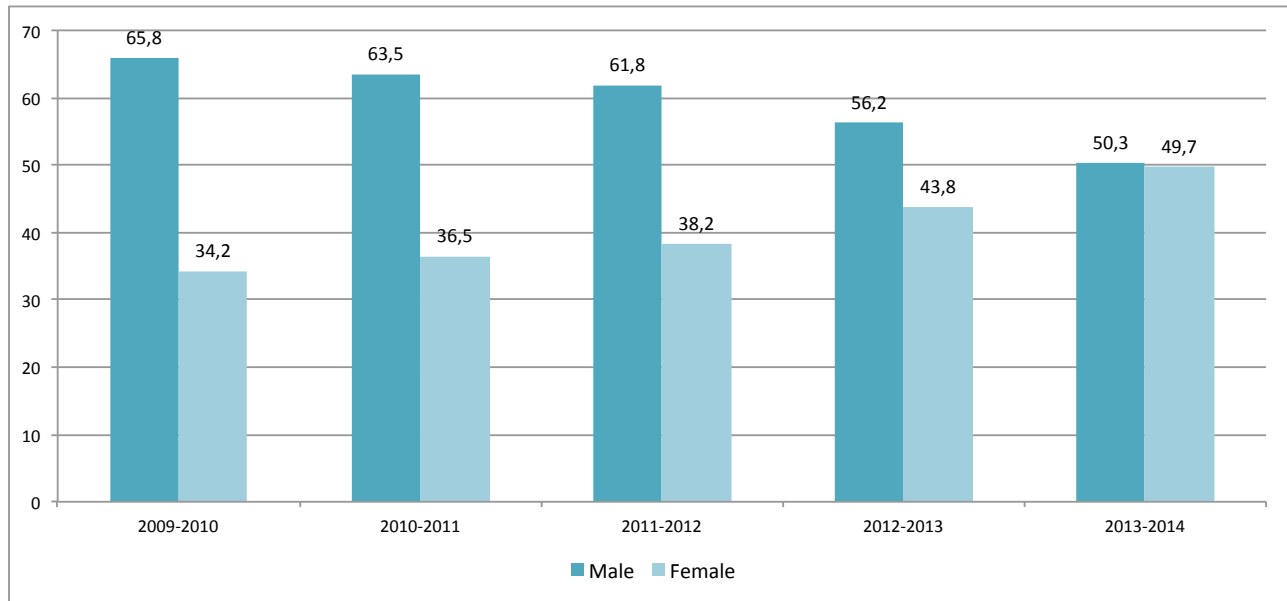
2.3 The Saint Paul Institute

The research will be based on a project that tries to overcome the lack of tertiary educational system in Cambodia. The Saint Paul Institute (SPI) is the only Catholic higher educational institution in Cambodia. Founded by bishop O. Schmitthaeusler in 2009, SPI hosts almost 400 scholarship and full-fee payment students across different undergraduate programs. Located in the Korkei Village, in Takeo province, is a challenge for all people living in the countryside. According to the SPI's Handbook 2014: "The mission of Saint Paul Institute is to inspire hope, nurture growth and promote human dignity through the integral education of students empowering them to become responsible citizens whose actions are based on irrevocable dignity of each human person".

Since 2009, the SPI has fostered direct links with National and International institutions. Among them, in 2012, the University of Milano-Bicocca; in fact, after a summer course in Development Economics organized by C. Falco and C. Alacevich⁸, a Memorandum of Understanding was signed between the two universities to implement a scientific and academic cooperation programme.

⁸ Two intensive weeks of lectures were organized by C. Falco and C. Alacevich and there were followed by 80 students. During the morning a front lectures were done while in the afternoon students were asked to prepare projects and

Figure 3: Percentage of SPI students from 2009 to 2014, by gender



Source: elaboration of data available in SPI Handbook 2014

It is interesting to notice the increase of female students during the years. Starting with a gender gap equal to 31.6% in 2010, the difference between male and female school attendance is becoming almost zero (0.6%).

Academic programs cover all major subjects suitable for the labour market: Information Technology, Agronomy, Tourism Management, English Literature, Social Work and Nursing. Moreover there are complementarily courses to improve the students' quality as English and Chinese Course, seminars and workshops. SPI provides also free accommodation to more than 200 students in three main dormitories.

Based on direct observation from SPI direction, 84.21% of graduate students in the 2013-2014 are employed with an average salary of 208\$ per month⁹. IT graduate are those with the highest salary, equal to 262\$ per month.

3. Project Implementation

3.1 Methodology

Our research will make use of a 'field experiment'. Randomized evaluations measure the impact of an intervention by randomly allocating individuals to an intervention by randomly allocating

develop issues related to their home country. At the end of the course, a certificate of attendance was given to all participants.

⁹ The annual GNI PPP in 2013 is 2230\$, that is almost 180\$ per month. World Bank data, 2013.

individuals to a “treatment” group, covering individuals who receive the program, and a “comparison” group, including individuals who do not, at least for some period of time, receive the treatment. The outcomes are then compared across treatment and comparison groups (Duflo, 2006). In our research project, the treatment group will be composed by students enrolled at Saint Paul Institute from 2009 to 2014 and their families. The control group will be composed by individuals (characterized by the similar starting situations) but residents in the Mondul Kiri province where there are no university.

SPI offers a bachelor level of education and thenceforth we have three waves for the empirical analysis:

- 2009-2012
- 2010-2013
- 2011-2014

This framework will give us the possibility to study the effect of tertiary education in a more detailed way.

To collect data, we will design a survey asking for all information necessary to test the hypotheses described in paragraph 1. Thanks to the *Strasbourg Experimental Economic Laboratory*¹⁰, we will have the possibility to use www.econonplay.fr platform in order to implement randomized evaluations and economic experiments. They will furnish us software for the analysis and 5/10 iPad to collect data easily.

3.2 Timeline

For the project implementation we will need six months¹¹. Starting from February, we will spend two months in preparing all the background materials: first, the literature review needed both for the survey design and for the final research output (i.e. academically oriented paper); second, the survey that will be distributed for data collection. Afterwards, we will conduct a pilot project necessary as review in order to verify possible mistakes or additional elements that we should consider at the final stage. During the pilot, we will start with the data collection for one month and half, then we will start with the data entry and preliminary data analysis.

Two months will be devoted to conduct the final research output.

¹⁰ Laboratoire d’Economie Expérimentale de Strasbourg (LEES) <http://www.econplay.fr>

¹¹ The timing is calculated from the project’s kick-off and it is could be slightly different if some problems occur.

Table 2: Project timeline

	02-2015	03-2015	04-2015	05-2015	06-2015	07-2015
Literature Review	√					
Survey Preparation		√				
Pilot Project			√	√		
Data Collection				√	√	
Analysis and WP1					√	√

3.3 Budget

The budget needed to implement the research is described in Table 3. Costs with the asterisk ‘*’ are compulsory in order to complete the research; the pilot project can be done in a more limited format and time.

Table 3: Budget description

Description	N. Persons/items involved	Unitarian Amount (EUR)	Total Amount (EUR)
Survey Preparation *	2	500	1000
Pilot Project	2	1000	2000
Travel Costs *	2	850-1000 ¹²	1700-2000
LEES (econplay) *	5/10	300	1500
Data Collection *	15	200 ¹³	3000
Data Analysis *	2	1000	2000
Total			Min 11200 Max 11500

¹²Travel costs are usually in the range of EUR 850,00 and EUR 1000,00 depending on time booking and availability.

¹³ EUR 200,00 is the montly average salary in Cambodia. Therefore this is the estimate amount we will give to research assistants that will help us in data collection.