

**TRANSITIONAL LABOUR MARKET POLICY:
LOGISTIC REGRESSION ANALYSIS ON THE DETERMINANTS OF
SUCCESSFUL TRANSITION FROM SCHOOL TO WORK IN CAMBODIA**

By

CHOEURNG, Theany

THESIS

Submitted to

KDI School of Public Policy and Management

in partial fulfillment of the requirements

for the degree of

MASTER OF PUBLIC POLICY

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ABSTRACT

LOGISTIC REGRESSION ANALYSIS ON THE DETERMINANTS OF SUCCESSFUL TRANSITION FROM SCHOOL TO WORK IN CAMBODIA

By

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Individual faces many problems within the labour market. School-to-work transition is an obvious social phenomenon to be witnessed that young people encounter many difficulties from education to the world of work. These difficulties are unemployment, difficulties in job searching due to the inadequate employment centers, occupational mismatch, working poor, occupational instability, and wage. Some of them are successful in getting a job while others could not get any job. The purpose of this paper is to find out key factors that contribute to successful transition from school to work in Cambodia. Based on the finding, the policy implication will be made to provide a smooth transition for the graduates or those who are leaving school. The purpose of the study will respond to two main questions:

1. What are the key determinants of successful transition from school to work?
2. What needs to be done to promote smooth transition from school to work?

The data used in this study is taken from Cambodian school-to-work transition survey. 2353 of respondents who leave school are the unit of analyses. Using logistic regression analysis, we are going to see relationship between variables. The interest independent variables are using employment center, working and studying combination, gender, region, age, individual level of education, field of education, mother's education and father's education. The dependent variable in this study is employment status after the transition.

The results are reported in odds ratio and marginal effect and discrete change of logistic regression. For the odds ratio interpretation, gender and working and studying combination have positive relationship with employment status while the rest of independent variables show no relationship. For the marginal effect for predicted probability, gender (being male), and working and studying combination have strong effects on employment status.

Based on the result, at least three policy areas should be taken into consideration. Firstly, women employment program should be further focused to promote women job attainment. Secondly, a well-designed employment center should be given priority so that more employment center are build and available for job seekers to use. Last but not least, the working while studying program should be widely provided to help student get hand-on experiences.

ACKNOWLEDGEMENT

This is the first empirical paper I ever made in my academic journey. Quantitative research design is somehow a complicated process that requires some sound knowledge of Mathematics and Statistics. The first time I decided to go on the empirical research paper, I really felt that much scared. Of course, many things have happened, both good and bad things. However, due to the good academic environment, efforts and constant helps, the final paper has been completed.

This achievement, of course, would have not been achieved without generous and on-going support from family, professors and friends at the KDI School of Public Policy and Management. Firstly, I would like to express my gratitude to my thesis advisor, Professor **Paik, Sung-Joon**, who plays a major part in providing me good advices and quick feedbacks on my paper. Profound thanks also go to Professor **Shin Jaeun**, who played the major role helping narrowing down my research topic and providing good comments on the final paper. Besides, I would like to extend my sincere thanks to a few friends, Anthony and Ayeyaw, KDI School students who always supported and pointed out the way to get this research paper done. Also, I would like to take this opportunity to thank to KDI School staffs who always provided generous support and my scholarship provider, National Institute of International Education (NIIED) under the Korean Government Scholarship Program (KGSP). Without them, I would not have stepped in Korea.

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LIST OF ABBREVIATIONS

CSWTS	: Cambodian School-to-work Transition Survey
CDRI	: Cambodian Development Resource Institute
ICPS	: Inter-census Population Survey
ILO	: International Labour Organization
NEA	: National Employment Agency
SWT	: School-to-work transition
TVET	: Technical Vocational Education and Training
YRDP	: Youth Resource Development Program

Chapter I

Introduction

1. Background

Within a life span, individual faces many critical events in the labor market. From the transitional labor market perspectives, these events exist within the movement from education to employment, movement from household works to employment, movement from employment to employment, and lastly the movement from employment to retirement¹. Let alone the other movements, individual is witnessed to encounter some critical problems within the movement from school to work. These problems are associated with the decision whether to work or continue for further education as well as skills development. Also, they may face unemployment, difficulties in job searching due to the absence of labor market institution, occupation mismatch, employment instability and wages related issues. This is probably because the national labor market institution is less responsive and incapable to provide healthy and good labour market environment for the smooth transition. Cambodia, where the labor market institutions are weak, has no exception.

2. Concept of School-to-work Transition

What does it mean by school-to-work transition? And what problems exist within this transition? Pual Ryan & Buchtemann (1996), the concept of school-to-work transition is defined as the movement of individual between two important social institutions so called, education and employment as young people are much influenced from these two institutions. Basically, the school-to-work transition covers the whole concept of school and working life. Many scholars have attempted to identify whether transition from school to work is really a problem and at least a few scholars, back to the late twentieth century, gave us some lights. Jacob & Lynn (1995) demonstrated that in the United States there was some sort of failures

¹ Gunther Schmid, 1998. Transitional Labor Market: A New European Employment Strategy

existed in the transition which was seen during the time from high school to employment. They went further to explain that the U.S government reported a chaotic situation that within this transition there were presences of joblessness and job instability. Further within this timeframe, some human capital scholars put much focus on unemployment spell, cost of leaving school prematurely and receiving labor-market experiences and job tenure. The authors continued that the life cycle of young people encompasses of two segments. The first segment is during which students make decisions that shape the links between their schooling and their future. This includes both the content of their education and its duration. The second segment is in which young people leave school and begin to work in the types of jobs that begin to mark the course of their future careers.

3. Problem Statement

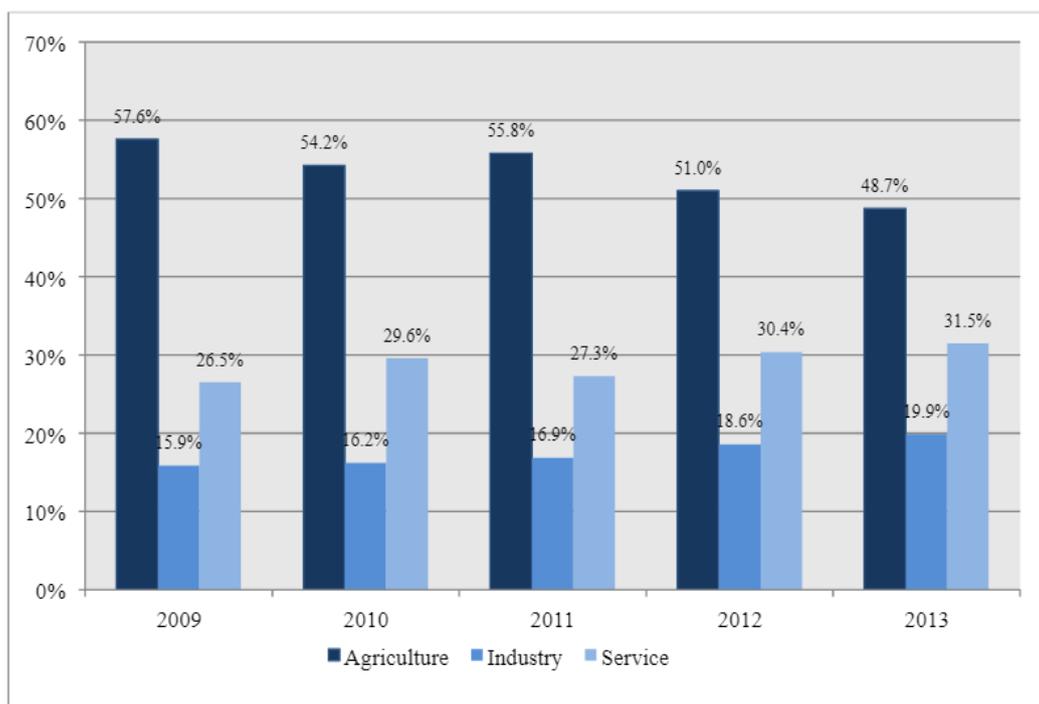
Why the study on school-to-work transition is important for Cambodia? The answer to this question is probably unique, in a sense that the purpose of study on school-to-work transitions is to find out associated barriers that block those who leave school to the world of work from obtaining a job. In other words, what factors are associated with the successful transition from school to work? Hence, studying this transition will help to identify all the problems and formulate policy recommendations to improve employability for those who are leaving education. Particularly, to see how much this study is important for Cambodia, firstly we need to take a closer look into Cambodian context to see what problems are in the appeal situation.

According to the Inter-censal Population Survey (2013), Cambodian total population is 14.68 million, and the growth rate is annually 1.83 per cent. In addition, the age structure of Cambodia is observed to have big shape at the bottom which implies that this country has a big number of young populations. However, the absence of proper policies and

implementation mechanism remains the obstacles for this country to enjoy long term growth with this huge number of young population.

According to the ILO, the labour force participation in Cambodia is 8 million in 2013. Within this number of labour force participation, 48 percent are working in agricultural sector because this country is originally the intensive agricultural country. The number of those who are working in the industry sector is accounted for 19.9 percent, which are mainly in the garment and footwear industry and food processing. The remaining 31.5 percent of labor force who are working is in the service sector which includes tourism, hotel and other kind of services.

Graph 1: Cambodian labour force by industry

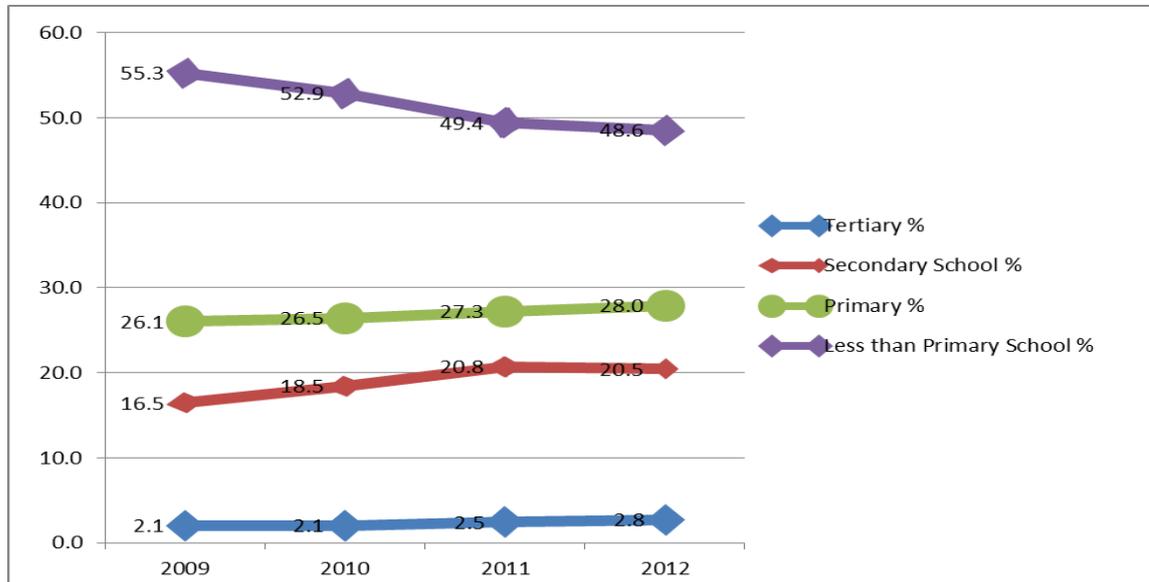


Source: CSEC, 2013

Interestingly, those who are in the labour force obtained low education. According to the ILO data, in 2012, those who are working have less than primary education which is accounted for 48.6 percent. Those who have primary education are 28 percent, following by 20.5 percent for those who complete secondary school. Surprisingly, only 2.8 percent

obtained education up to tertiary level. The detail of labour force participation by level of education is shown in graph 2 below.

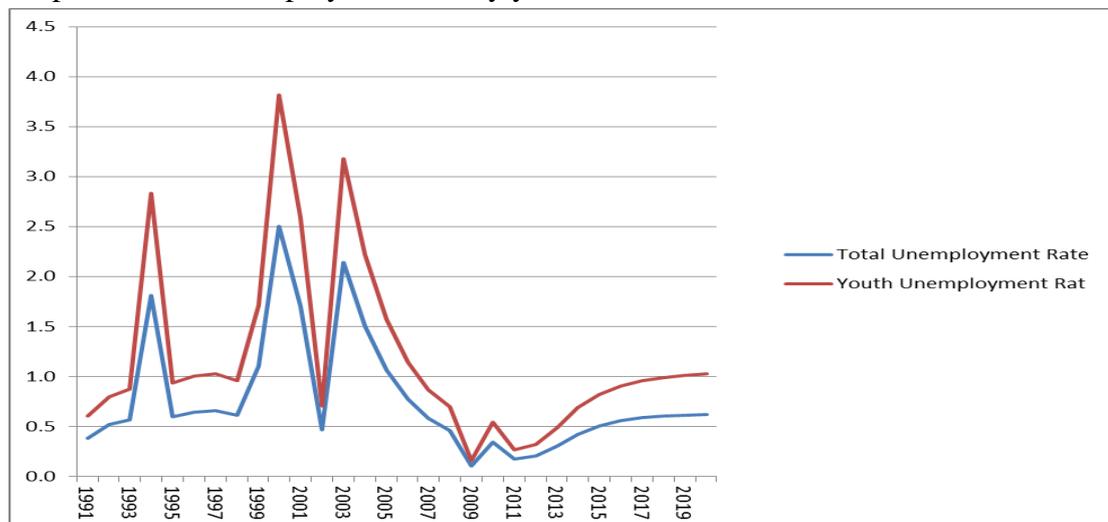
Graph 2: Cambodian labour force participation by education 2009-2012 (%)



Source: ILO, 2015

For youth unemployment, there is an interesting fact we need to know. The data from the ILO which is related to the youth unemployment rate is described in the graph 3 below. Even though the graph shows that youth unemployment rate is low in Cambodia, the reality gives us more picture than the numerical illustration.

Graph 3: Youth unemployment rate by year from 1991-2019e



Source: ILO, 2015

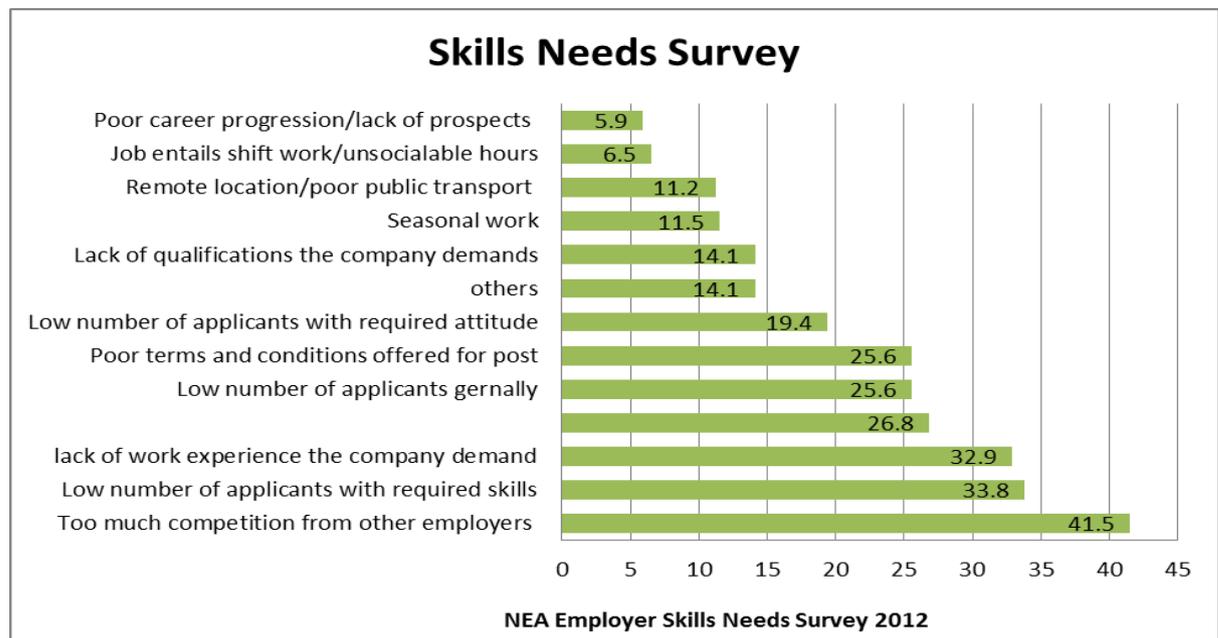
Many young people are entering the labor market; however, jobs are not available for them. Annually, there are approximately 300,000 new labor forces entering the labor market; however, the ability of the market to have them in job is very limited due to unfavorable labor market conditions (YRDP, 2012). Some problems are related to education aspects, both equity and quality which made the obstacle for the transition itself. A report by ILO says “young people are lack of skills and some of them leave school without being well-equipped, which becomes an obstacle for them to obtain a job.”

The institutional linkage between educations to working life in Cambodia is designated to be the sole responsibility of the National Employment Agency (NEA) and some national training centers. The National Employment Agency (NEA) was established in 2009 by the Royal sub-decree to provide information related to employment and other labor market services. Currently, there are 7 job centers in 7 out of the 25 provinces in Cambodia under the NEA framework. These provinces are Battambang, Siem Reap, Sihanouk Ville, Kompot, Svayrieng, Kompong Cham, and Phnom Penh. The map of job center in each provinces and management structure of the National Employment Agency are illustrated in figure 1 below. However, due to the limitation of the resources, the performance of the job centers is limited and NEA is not widely known by the public.

in rural area over urban. Due to the absence of decent work and social protection in the country, those who are employed are insecure and vulnerable. Another important factor is the insufficient and short supply of formal employment that is critical barrier, particularly for the young people to enter the labor market (ILO, 2012)².

Finally, skill gap and skill mismatch is another challenge which needs immediate attention. As illustrated in a survey on employer skills needs, Cambodia faces a problem of hard-to-fill vacancy problem. There are numerous causes associated with this problem, but the main causes in this study are academic degree, qualifications, specific skills, experiences required by the employer side as well as experience the company demand. The detail of hard-to-fill vacancy is shown in the skills needs survey below which conducted by National Employment Agency³.

Figure 2: Causes of hard-to-fill vacancies



Source: NEA, 2012

² Decent work country profile, (ILO, 2012) from http://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms_185267.pdf

³ NEA conducted the skills needs survey in 2012. The responses were made by the employers based on the causes of hard-to-fill vacancies.

4- Research Objective

The purpose of this study is to investigate key factors that contribute to successful transition from school to work. Based on the findings, drawing policy implications is made to improve the school-to-work transition in Cambodia.

5- Research Questions

Some people find it easy to obtain a job while others may find it hard and take longer time to obtain one due to internal and external causes of individual. Hence, the primary questions of this study are:

1. What are the key determinants of successful transition from school to work in Cambodia?
2. What needs to be done to promote smooth transition from school to work?

To answer the research questions above, a number of independent variables such as using employment center, gender, age, region, level of education, field of education, experience of working while studying, mother's level of education and finally father's level of education have been taken into consideration. Hence, this study aims to test whether each of these variables have a statistically significant relationship with graduates' employment status.

Chapter 2

Review of the Literature

Various studies have been conducted to investigate the characteristics of school-to-work transitions in numerous countries. Some studies show what determine the successful and smooth transitions from school to work were. Hence, this chapter presents a literature review of previously conducted researches on this subject matter.

A study by Robert W. Renn, Robert Steinbauer, Robert Taylor and Diel Detwiler (2014) focused on the relationship between mentor career support and other variables such as career planning of students, the intentions on job search and self-defeating job search behavior in school-to-work transitions. The result showed that mentor career support has a positive relationship with student career planning and job search intentions. The authors also claimed that there is a negative relationship between mentor career support and student self-defeating job search behavior. This result suggests important policy implication that mentor career support and employment center expansion should be taken into consideration to improve labour market situation.

Jessie Koen, Ute, & Van (2012) also shed some light on the school-to-work transition. Their study focuses on training career adaptability to facilitate a successful school-to-work transition. The authors proposed that career adaptability, provided by employment center, training center or academic institution might help remedy the school-to-work transition problems. This study employed a longitudinal field quasi-experiment comparing the development of several career adaptability dimensions between a training group, consisting of 32 people, and a control group, consisting of 24 people, over three points in time (pre-training, post-training and follow-up measurement). The career adaptability dimensions are included four main aspects. Firstly, it is related to career concerns. The researcher assessed this dimension by preparing items such as future preparation and what life should be in the

future. The second dimension is related to career control, which refereeing to own decision maker and responsible taker. The third dimension is related to career confident which enable the trainee to perform the tasks efficiently hard working spirit. The final dimension is about career curiosities which are more likely about career possibilities and searching out. The result also points out that the training participants reported higher employment status and quality than members of the control group. Thus, the study concludes the importance of to providing graduates with career adaptability resources so that students can raise their chances of finding a quality job.

The World Bank (2007) studied on how education can improve labor market outcomes. The study focused on two aspects that are important to explain school-to-work transitions. The report argued that good education policy is critical; however education alone cannot guarantee an individual the benefits expected from the labor market. To achieve an efficient education system that facilitates a smooth school-to-work transition, various labor market conditions such as stability of the whole economy, a favorable investment climate and good institutional linkages are needed. The report also pointed out that literacy, numeracy, and cognitive skills are strong indicators of the role of education in determining labor market outcomes. Some recent evidence in Pakistan, according to the World Bank also stressed that investment in early childhood to develop cognitive skills produces long-term positive impacts, skills development and labor market outcomes.

The gender inequality on employment outcome is also focused in this study. Hence, the review on whether who obtain a job faster between men and women during transition has been made. Melinda and Patrick (2014) provide us a solid evident on the matter of gender inequality, particularly in the school-to-work transition. The focus of the study was cross-national variation particularly the speed of getting first job after leaving education in 29 European countries. The result showed that men and women in European counties have the

same speed of getting a first job a few months after leaving school. Other than this time, the trend starts to diverge between men and women, suggesting that men have higher likelihood to find a first job than women across all time periods. In simple comparison, men have significantly faster transition to the first job.

Marianne and Richard (2000) have emphasized their study on the relationship between working and studying at the same time and the transition outcome. This study was conducted between 1996 and 1998 in 14 OECD member countries. Since it was the cross-country study, 15 indicators of transition were used classified by pathway types. The result revealed that there was a positive transition outcome when student associated with either part-time or holiday job. In simple words, the result suggests that if students have worked, either part-time, during holiday, or school break, they would have a good and positive transition outcome. This study is meant for the message on the workplace experienced organized by school, and other related institutions for student to get hand-on experiences.⁴

Finally the literature which is considered important to this study was done by Kyung-Nyun Kim in 2009. His study focused on the determinant of success from school-to-work transition which targets the high school students who never enrolled in the school after finishing their high school for the period of time from 3 to 6 years. This study employed the data source from the National Longitudinal Survey of Youth 1997. The results revealed that the determinants of success are associated with parents' education, work experience during the school times, gender, courses they learnt at school, school-to-work programs and individual self-esteem to seek out opportunities. To be more specific, his study showed that male is more likely to have job than female counterpart with coefficient $\beta=0.48$ and $p=0.04$. In addition, with regard to parent's education which is less than high school is negatively associated with the success of getting employment. The work experience also shows positive

⁴ Marianne and Richard. The transition of youth from school to work: issues and policies. *From initial education to working life: making transition work*. 2000. <http://www.unesco.org/iiep>

association with being employed. The course of what student learnt at school is associated with being employed with the $p=0.05$. However, one year higher in high school level, in his study has negative association with being employed after the transition in this bivariate analysis.

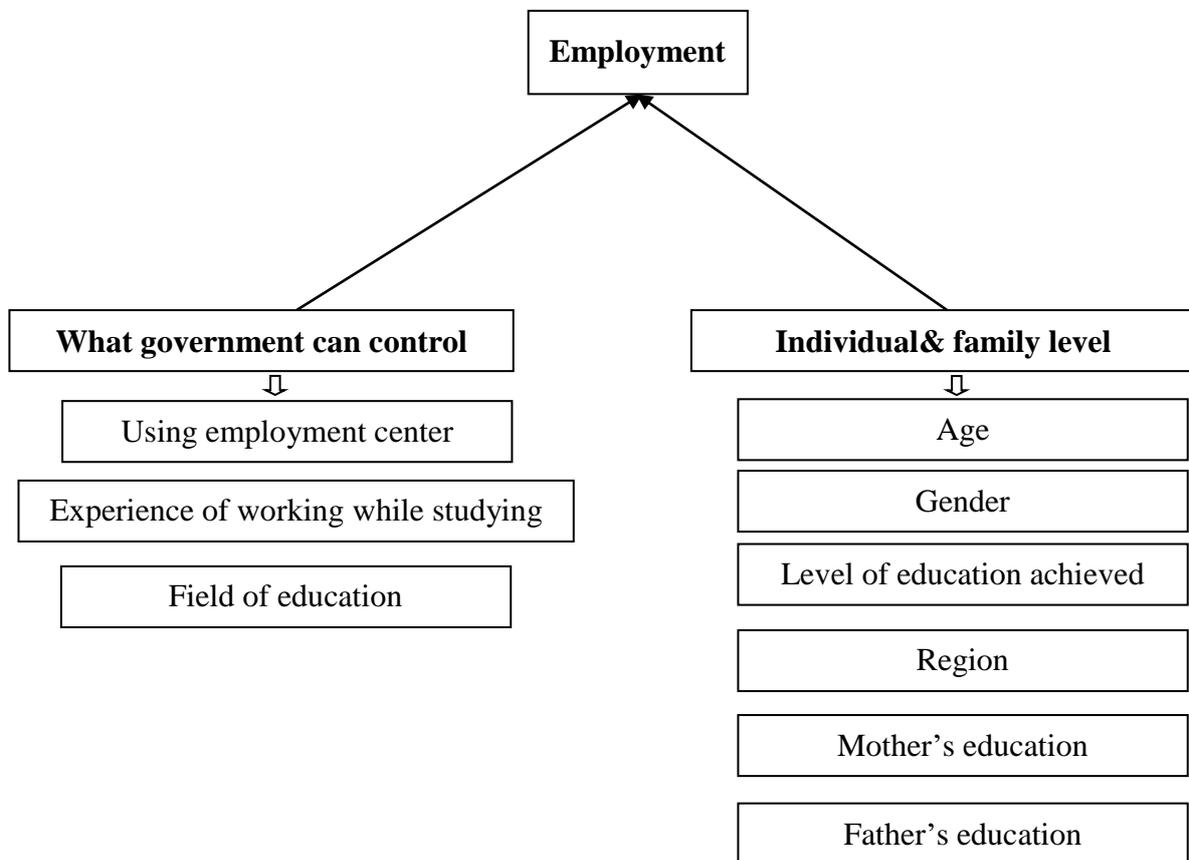
The literatures above already suggested some important variables such as gender, parents' education, individual level of education, courses students learnt at school, work experiences at the same time as studying,. With this regard, I would like to prove my hypothesis on the Cambodian case to see whether these common characteristics could be applied to the Cambodian setting and meant for the policy recommendations.

Chapter 3

Conceptual Framework

By thoroughly learn from literature, the following model could be developed as the model of the successful transition from school to work in Cambodia. By this sense, successful transition, or in other word, being employed or unemployed is contributed by a number of variables, which is classified into 2: under what the government can control and individual control.

Diagram 1: Successful transition model



Based on this framework, employment centers are regarded as the place where services are served there. The services are information about jobs, training opportunities and job placement. It is also the place where employees and employers meet each other to

exchange good and services. By this framework, if individual uses employment center, he or she is more likely to get a job.

At the same time, this framework includes the working at the same time with studying so that individual may accumulate some experiences. Whether they work part-time job or during the semester break, this experience can be cumulative and as a result being helpful for the good transition of obtaining a job.

In addition, there must be some gender inequality on getting a job between men and women. In some societies, female are having less chance than their male counterpart not only in terms of education attainment but also labor market outcomes. For Cambodia case, this study will see whether male is better than female in this study. Hence, it is included in the framework.

Whether individual is residing in rural or urban area is considered to have some impact after the transition. This simply means that in rural area those who leave school are able to find job than those who stay at urban or vice versa. Hence, this study includes region of individual, specified by rural or urban.

Age can be associated with the decision to accept a job. One year older can influence your decision to accept a job, regardless of wage or working condition it be. Hence, age is included in this framework.

Finally, education is brought to this conceptual framework in the sense that education level can be helpful for student to be able to get a job. This study not only takes into account the individual's level of education but also the field of education he or she has achieved. Furthermore, the suspicious is whether father and mother's education can have some impact on the successful transition is also included in this conceptual framework.

Chapter 4

Data and Methodology

4.1 Data

4.1.1 Overview of the data

This study uses the CSWTS data which was conducted in 2014 by the National Institution of Statistic (NIS) under the support work for youth program of International Labor Organization (ILO). This is the national cross-sectional data survey conducted through 26 cities and provinces in Cambodia, with the total sample of 3,396 across nation. However, to serve the purpose of this study, some observations have been dropped and the total number of observations to be used for the analysis is 2,353⁵.

Table 1: Criteria for sample selection

The criteria for sample selection	Valid case
Total sample of CSTWS 2014	3,396
Not continue their study	2,484
Have looked for work	2,445
Completed dataset for interest dependent and independent variables	2,353
Final sample	2,353

The special characteristic of the sample within this study is that their age is 15 to 29 because this age group is within the stage where most of transitions from school-to work transition take place. In addition, this study uses quantitative approach analysis which based on the survey questionnaire described above.

4.1.2 Dependent Variable

The ultimate outcome of the school-to-work transition is getting employment. Hence, in this study, desirable successful transition refers to the ability of those who can obtain job after the transition. With this regard, this study considers obtaining a job as dependent variable because getting a job can be influenced by numerous independent variables.

⁵ This study targets only those who already left education. Hence, the numbers of students who still continue their study were dropped.

4.1.3 Independent Variable

This study will try to identify the correlation between number of independent variables and employment as independent variable.

Table 2: Interest variables

Types of Variables	Variable within the survey	Indicators	Explanation
Dependent	Employment Status	1=working 0= not working	This variable explains the result of the transition from school to employment.
Independent	Experience of working while studying	1= yes 0= no	This variable depicts experiences. Some student may have worked either part-time work during study or during school break while other only for studying but have never worked.
	Using employment center	1= yes 0= no	There is a belief that when individual search for a job often, they will obtain a job faster. Hence, this study will look at the using employment center as the indicator for using students' job search behavior
	Gender	1= male 0= female	The variable gender is taken into account to see the gender difference in obtaining a job between male and female.
	Region	1=rural 0=urban	The variable is dummy which denotes whether individual is residing in rural or urban
	Age	From 15-29	According to ILO study on school-to-work transition, the age of respondents is between 15 to 29
	Individual level of education	1= high school or tertiary 0= below high school	Individual's level of education in this study is classified into dummy. First is for those who finished high school or tertiary. The remaining respondent was coded as below high school
	Field of study	1= science 0=social science	This dummy variable denotes whether individual studied social science or natural science.
	Mother's education	1= high school and tertiary 0= below high school	Mother education is denoted by whether she has higher or below high school.
	Father's education	1= high school and tertiary 0= below high school	Father's education is denoted by whether he has higher or below high school.

4.2 Analytical Methodology

This study uses binary logistic regression model to explore the probable magnitude effect of various independent variables on interest dependent variables. The logic behind using this model is that logistic regression model measures the relationship between binary or categorical dependent variables and one or more independent variables by estimating probabilities using a logistic function, which is a cumulative logistic distribution (Wooldridge, 2013).

Formula of logistic regression

Binary logit regression model is used to measure the effect of two or more interest independent variables on employment status as dependent variable. Hence, the formula is specified as below⁶:

$$\text{Loge}[\text{odds (work: no work)}] = \text{Logit}(\pi(x)) = \log[\pi(x)/(1-\pi(x))] = \alpha + \beta x$$

Where

Logit ($\pi(x)$)	:	Logistic regression model
$\pi(x)$:	Probability of success at value x
$\pi(x)/(1-\pi(x))$:	Odds ratio used to produce a linear function of the covariates for the logistic function
α	:	intercept for binary regression
β	:	Matrix of regression coefficients for predictor variables

Marginal Effect

This study also reports the marginal effect and discrete change. Park (2010) stated that marginal effects and discrete change are important for the interpretation of a binary outcome. So reporting marginal effect is recommended. We already learnt that in linear regression model, the slope coefficient of an independent variable measures the effect on the average value of dependent variable. Since this study employs logistic regression which deals with probability, we need to be cautious with interpreting the slope coefficient. According to Gujarati (1995), in logistic regression, the slope coefficient measures directly the change in

⁶ Richard Williams, University of Notre Dame, <http://www3.nd.edu/~rwilliam/> Last revised February 21, 2015

the probability of an event occurring as the result of a unit change in the value of the independent variable. The marginal effect of a continuous independent variable x_c is the partial derivative of that variable. In this study, age is the only continuous independent variable. The marginal effect of continuous variable is derived:

$$[\partial P(y=1 | x)]/\partial x_c = \exp(x\beta)/[1+\exp(x\beta)]^2 = \Lambda(x\beta)[(1-\Lambda(x\beta))]\beta_c$$

The discrete change of a binary independent variable x_b is the different in predicted probabilities of $x_b=1$ and $x_b=0$, holding all other independent variables constant at their referent points. The interested binary independent variables in this study are using employment center, gender, region, and level of education, field of education, working and studying at the same time, mothers' education, and fathers' education, working and studying at the same time. The discrete change is obtained by $\Delta P(y=1 | x)/\Delta x_b = P(y=1 | x_b, x_b =1) - P(y=1 | x_b, x_b =0)$ for the independent binary variable (Gujarati, 1995).

Chapter 5

Results

1. Descriptive Statistics

As already mentioned in the methodology part, this study used the data from school to work transition which consists of 2,353 observations. Before moving to the regression result, the descriptive result of this study is described to provide some basic statistical distributions of the study sample. The descriptive part is basically about the frequency or percentage of interested variables.

Firstly, with regard to gender, the number of female participation is 1,377 which equal to 58.52 percent whereas male respondents are 976 which equal to 41.48 percent. Table 3 shows the detail of gender distribution.

Table 3: Gender

Gender	Frequency	Percentage
Female	1,377	58.52
Male	976	41.48
Total	2,353	100.00

For residential location, the distribution of respondents in this study is classified by areas: rural and urban. In this study, the rural respondent consists of 1,892 respondents which equals to 80.41 percent while there are only 461 urban respondents which is 19.59 percent.

Table 4: Resident area of respondents

Area	Frequency	Percentage
Rural	1,892	80.41
Urban	461	19.59
Total	2,353	100.00

The age structure of the sample is described in table 5. This research survey focused on the sample which has age distribution from 15 to 29 years old of age. Each age distribution is described in the detail by the table below.

Table 5: Age Structure

Age Distribution	Frequency	Percentage
15	81	3.44
16	110	4.67
17	108	4.59
18	134	5.69
19	175	7.44
20	185	7.86
21	172	7.31
22	183	7.78
23	181	7.69
24	188	7.99
25	183	7.78
26	183	7.78
27	169	7.18
28	171	7.27
29	130	5.52
Total	2,353	100.00

Table 6 describes the level and field of education obtained by the respondents in the survey. We observe from the survey that the number of those who obtained the education below high school constitute 93.92 percent. On the other hand, the number of student who finished their level of education beyond high school is 6.08 percent. In terms of field of education, most of the respondents took social science which constitutes 98.26 percent and only 1.74 percent took science subjects.

Table 6: Level of education obtained

Level of education obtained	Field of education obtained
Below high school	Social science
High school and beyond	Natural science
Total	

Table 7 shows the level of parents' education. The table shows that 87.34 percent of mother education finished their degree less than high school and only 12.66 percent of them finished their degree at high school or tertiary level. On the other hand, father's education is higher than mother counterpart in the high school and tertiary. The statistic shows that 82.75

percent of respondents' father finished their education level below high school and only 17.25 percent of them finished at high school or tertiary level.

Table 7: Parents' education by degree

Level of education obtained	Mother	Father
Below high school	87.34	82.75
High school and beyond	12.66	17.25
Total	100.00	100.00

Table 8 shows number of individual who uses employment center. According the survey, the number of people who experienced using employment center constitutes 2.68 percent to the total sample. Those who responded to have used the employment office reported to have use for various purposes. For instance, from the questionnaire, some of them got some advices on how to search for a job. In addition, some people used the employment center to obtain the information on vacancies, guidance on education and training opportunities, placement in education or training program and others. Even though the employment offices are not widely available nationwide, maybe it was the labor market programs organized by the employment office made it available to the local community. In contrast, 97.32 percent of the respondents reported they never used any kind of services by the employment center.

Table 8: Experience of Using Employment Center

Use employment Center	Frequency	Percentage
No	2,290	97.32
Yes	63	2.68
Total	2,353	100.00

However, among 63 graduates who responded to have used employment center, only one of them has unemployment status right now. Hence, the employment ratio of graduates who used employment center is 98.41 percent (see table 9).

Table 9: Employment ratio of graduates who used employment center

Graduates who used employment center	Frequency
Being employed now	62
Being unemployed now	1
Total	63
Employment ratio of graduates who used employment center	98.41%

Table 10 illustrates the number of students who used to do some work while they were study. This kinds of work were done during school time or school vacation. The result showed that 81.98 percent of the sample responded that they happened to work during the time they were studying.

Table 10: Work and study combination

Ever work while study	Frequency	Percentage
No	424	18.02
Yes	1,929	81.98
Total	2,353	100.00

2. Empirical Result

2.1. Bivariate and multivariate logistic regression

This part shows empirical result of the determinants of successful transition of individual from school to work by seeing the odds ratio. As already stated in the previous chapter, there are 9 main interest independent variables that we are going to see its relationship with employment status. Firstly, bivariate logistic regression is used to see the potential relation of each independent variable on employment status. Secondly, multivariate will be used by adding each variable into the model to see the association and degree of independent variables with dependent variable. By putting these independent variables together, we can see the relative impact of each variable on the dependent variables.

Table 11 shows the result from the bivariate logistic regression between employment status and other potential variables which are considered to be determinants of successful transition from school to work. The result reveals that variable gender has positive

association with employment status with the coefficient $\beta=1.428$ and p-value 0.000. The odds ratio from the analysis is 4.16, which suggest that in Cambodia, gender has significant impact on employment status after the transition. Per odds ratio interpretation, this simply means that the predicted odds ratio of getting employed is 4.16 times greater for male, compared to female. This fact shows an implication of inequality of obtaining a job between male and female.

Table 11: Bivariate logistic regression between independent variables and employment status

Bivariate logistic regression	Odds Ratio	β (Standard Error)	P Value	Pseudo R2
Employment status (dummy)				
Gender (dummy)	4.166	1.428*** (0.22)	0.000	0.0460
Using employment centers (dummy)	4.539	1.538 (1.01)	0.128	0.0034
Experience of working while study (dummy)	1.616	0.514** (0.19)	0.006	0.0059
Region (dummy)	1.102	0.219 (0.20)	0.263	0.0010
Age	0.993	-0.00705 (0.02)	0.69	0.0001
Mother's education (dummy)	0.781	-0.356 (0.22)	0.10	0.0021
Father's education (dummy)	0.812	-0.349 (0.20)	0.07	0.0025
Level of education obtained (dummy)	1.027	-.024 (0.33)	0.94	0.0000
Field of education (dummy)	0.7532	-.073 .60	0.90	0.0000
<i>N</i>		2353		

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Moreover, using employment center doesn't significantly associate with employment status but the odds ratio for employment center is 4.53 which suggest that for those who use employment center, the predicted odds ratio of getting employed is 4.53 times greater for students who used the employment center, compared to the odds ratio for the students who did not use the center. This result is consistent with what has been discussed in the previous section on the employment ratio of graduates who used employment center. This is significantly important aspect to design more well-functional employment center.

Interestingly, experiences obtained from working while studying of the respondents show positive relationship with the employment status, with coefficient 0.514 and p-value equals to 0.006. This reflects the idea that experience plays an important role in the transition. Individual who used to work some jobs either during their school time or school break will have some positive impact on the transition. The result shows that those who responded that they used to work at the same time while studying have the odds ratio of 1.61, suggesting that graduates who worked while studying are more likely to get employed than those who did not.

Region, whether individual is residing in rural or urban has a positive relation with employment but not significant. The odds ratio also suggests that rural residing respondents are 1.1 odds ration than urban counterpart for the employment status. Also, age is no significantly associate with employment status. One year older doesn't affect the decision to get employment. Furthermore, related to parents' education, the results show that mothers' education above high school or tertiary doesn't affect the employment status, so as the fathers' education, individual level of education and field of education.

Table 12 shows the multivariate logistic regression analysis results when all independent variables are put in the model. Multivariate will give a complete picture on the degree of association and variation regarding the determinant of successful transition.

Table 12: Multivariate logistic regression between interest independent variables and dependent variable

	Model 1	Model 2	Model 3
Employment			
Gender (d)	1.424*** (0.22)	1.416*** (0.22)	1.427*** (0.22)
Region (d)	0.167 (0.20)	0.119 (0.20)	0.0974 (0.21)
Age	-0.00865 (0.02)	-0.00846 (0.02)	-0.00698 (0.02)
Using Employment Center (d)		1.515 (1.01)	1.513 (1.02)
Experience of working and studying (d)		0.496* (0.20)	0.480* (0.20)
Mothers' education (d)			-0.247 (0.30)
Father's education (d)			-0.208 (0.27)
Level of education (d)			0.0268 (0.41)
Field of education (d)			-0.283 (0.72)
<i>N</i>	2353	2353	2353

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the first model, we are going to look at three interest variables which are related individual demography. These variables are gender, age and residing region. Only gender is significantly correlated with the employment status.

The second model includes two more variables into the previous model. These variables are using employment center and experience of working and studying combination. The result shows that experiencing working while studying has significantly association with the dependent variable despite there is a slight decrease comparing to bivariate result. On the other hand, using employment center has the same result as the previous bivariate model analysis.

Individual level of education, field of education and parents' education are integrated in the third model with other variables to see the overall picture of the analysis. Overall, the result illustrates that only gender and having experience in working while studying at the same time are significantly associated with the employment status.

2.2. Marginal effects and discrete change

The odds ratio gives the effect size or the strength of association between binary variable and we already saw its effect size in previous section. This part will look further at the marginal effects. Wooldridge (2013), marginal effect refers to the means comparison between responses of independent variable. Let's say if the binary independent variable changes from the value of 0 to 1, how much corresponding change to the dependent variable. Simply, it tells how much corresponding change in dependent variable when there is a unit change in independent variable. As already shown in the methodological part, marginal effect is the first derivative of dependent binary variable when independent variable changes from the value of 0 to 1. How to get marginal effect already illustrated in the methodology part.

Using Stata, we generate the marginal effect and discrete change in table 13 below. They are listed under (Dy/dx). According to the table, the predicted probability of getting employment is 0.0702 greater for male than female, keeping other independent variables constant at the reference point. Marginal effects of using employment center give us an interesting prediction. By keeping other independent variables at it reference point, the

predicted probability of getting employed is 0.044 greater for individuals who used the employment center than for those who did not. The predicted probability of getting employed is 0.29 greater for graduates who worked while studying than for those who only studied. Other variables show insignificant.

Table 13: Marginal effects at mean

Marginal effects after logistic $y = \text{Pr}(\text{employment})$ (predict) $= .94530165$							
Variable	Dy/dx	Robust Std. Err.	z	P>z	[95% Conf. Interval]	X	
Gender (d)	.0701961	.00948	7.40	0.000	.05161	.088782	.41479
Region (d)	.005171	.01138	0.45	0.650	-.017139	.027481	.80408
Age	-.0003611	.00095	-0.38	0.704	-.002222	.0015	22.5308
Using Employment Center (d)	.0437318	.01412	3.10	0.002	.016065	.071399	.026774
Experience in working while studying (d)	.0285982	.01359	2.10	0.035	.001956	.055241	.819805
Mothers' education (d)	-.0138584	.01839	-0.75	0.451	-.049907	.02219	.126647
Father's education (d)	-.0114099	.01595	-0.72	0.474	-.042672	.019852	.172546
Level of education (d)	.0013695	.02075	0.07	0.947	-.039304	.042043	.060773
Field of education (d)	-.0165656	.04745	-0.35	0.727	-.109569	.076438	.017425
(*) dy/dx is for discrete change of dummy variable from 0 to 1							

Chapter 6

Discussion and Conclusion

The results show the determinants of successful transition from school to work for the Cambodian case. Particularly, from the logistic function, it shows gender and experience while working and study at the same time of students are positively significance to successful transition. Using employment center, though it is not important in the odds ratio at the 5% significant level, is important for post-estimation or predicted probability as illustration in the marginal effect. The reason for this difference is that when odds ratio is calculated, the baseline odds drops out, so it not significantly importantly. However, the magnitude of the probabilities is important in testing the significance of marginal effect (Heather Holt, 2010).

This result corresponds to the literature by Linda and Partrick (2014) that gender really matters on employment status and working experience really plays an important role within the transition, which responds to the study by Marianne and Richard (2000). Parents' education also corresponds to the literature that it has no impact on the employment status of their children, which contrast to the view by Waldinger and Licher (2003) that parents may have some impact on children' employment status for the reason that when they get higher education, they may create a good network and know other educated people, which can affect the employability of their children. Ages, region, field of education and level of individual education have contribute to some extend even though the coefficient are not significant in that level. Based on this result, we can accept the hypothesis that, gender and working and studying combination significantly affect employment for the successful transition.

To elaborate with the empirical results which have already been in the previous chapter, let's take a closer look to some government policies to promote employment for Cambodian young people. The Fifth Legislature of the Royal Government of Cambodia

mandated from 2013-2018 focuses on the four specific priority areas on the human resource development. The first area intends for skill training and labor market information system available for job seekers and employers so that the market demand and supply are met. Secondly, the development of necessary regulatory frameworks to improve the education and training institutions is taken into account. Thirdly, the participation from private sectors is encouraged so that it will be helpful for job creation purpose. Finally, the area of improving the quality of education and the promotion of scientific research are emphasized. These four related areas are meant to promote employment in Cambodia. The empirical result supports that, to some extent, the first priority area of this legislation has been achieved. Hence, to reach the level of satisfied policy objective, the immediate focus should be in the first priority area within this legislation, meaning that to focus on the employment center which has multi-function for employment promotion.

On the other hand, Ministry of Women Affairs (MoWA) has been so far working to improve women participation in politic as well as employment for women, through collaboration with ILO, MoLVT, and trade unions. This policy plan is officially known as Cambodian Gender Strategic Plan-Neary Ratanak 4. However, the percentage of women to get employment is relative low comparing to men. This fact means more for the policy revision.

Using employment centers, according to the empirical result produces no statistically significant. However, as per looking at the employment ratio of graduates who used employment centers are big (98.42%), this means for endeavor for promoting the use of employment center. For the policy recommendation, the uses of employment center should be promoted and used widely because it intuitively true that it may help job seekers to get a job faster and especially, resolving the mismatching problems. To make the employment services

attractive to youth who are seeking for a job, the government should consider funding the employment services.

Besides looking at government policy, key informant interview is also used to complement the empirical result. The interview was done through email interview with the vice-president of National Employment Agency, the public employment services in Cambodia. According to Mr. Hay Hunleng, the vice-head of National Employment Agency, since the establishment of NEA, this public agency has been playing a very crucial function in Cambodia labour market. Responding to the question on what kind of services are being attractive to the job seekers, the answer was pointed out to be job fair or career fair. He continued that there were 11 careers fair and career seminars had been done. Careers fairs are done two or three times per year while the remaining is career seminar. In 2013, both career fair and seminar were held, reaching 94 times throughout the year. The career seminar and careers fair were mostly held in the city.

The service users of public employment services are employers, job seekers as well as training providers. The common duty of NEA is to help exchanging the information to the service users in the labour market. The major challenges to NEA are related to both financial and human resources. Due to these challenges, the coverage of job center is small and limited number of staffs to keep the operations in each respective job center operating. The financial resource also remains the big problems for the public employment. The operating budget received from the government however, the amount is so limited to implement the activities.

In conclusion, based on the result, at least 3 relevant policy areas should be given much priority for Cambodia to have a smooth transition from school to work. First of all, the working while studying program is important for the transition. Considering the fact that working while studying gives student a hand on experiences, it will give them chance to get employment faster. Hence, the attention to create the opportunities such as part-time job,

internship and apprentice program should be heavily focused. This should be done through closed collaboration among government, employer associations, and employee representatives.

Another important implication for this study is female employment policy programs. As the result of the study already pointed out that male are more likely to obtain a job for the odds ratio of 2.61 higher than female. This statistic shows the unequal chance between male and female in obtaining a job. Hence, the policy for female to have equal or better chance than male should be given more attention in any atmosphere of job attainment, especially the public institutions.

Also, the attention should be focused on the creation of a well-functioning employment centers, having enough human resource to be well functioning and more financial allocation to this public employment service institutions. In addition, related policies need to ensure that this institution is widely accessible to all the remote areas so that students who leave or finish school are able to use the services and able to find a job respectively after the leaving. This employment center should focus on some areas of work such as the advice on how to search for a job, all kind of vacancy information, guidance on education and training opportunities, placement in education or training programs. Due to the limited role, more resources should be placed to the active labour market program and employment services so that these agents will produce positive impacts, especially to the disadvantaged group of young people. The employment centers should also consider the career adaptability program as per reviewed in the literature section. Since career adaptability dimensions concern with career concerns, career control, career confident and career curiosity. This work can be done in collaboration with academic institution and training centers.

Last but not least, for the education part, even though it shows no significant in this study due to the fact that the sample respondents have below high school education level, the classical theory of human capital, by Becker should not be ignored. Hence, promoting students to get more education can be beneficial in the long term.

For further research, the focus should work on some aspects of work individual obtained. These aspects include wage structure, characteristics of works and quality of works.

APPENDIX

1. Bivariate, Multivariate and Marginal Effects

1.1 Bivariate logistic regression

Bivariate logistic regression	B (SE)	P	Pseudo R2
Employment status (dummy)			
Gender (dummy)	1.428*** (0.22)	0.000	0.0460
Using employment centers (dummy)	1.538 (1.01)		0.0034
Working & studying combination (dummy)	0.514** (0.19)	0.006	0.0059
Region (dummy)	0.219 (0.20)	0.263	0.0010
Age (dummy)	-0.00705 (0.02)	0.69	0.0001
Mother's education (dummy)	-0.356 (0.22)	0.10	0.0021
Father's education (dummy)	-0.349 (0.20)	0.07	0.0025
Level of education obtained (dummy)	-.024 (0.33)	0.94	0.0000
Field of education (dummy)	-.073 .60	0.90	0.0000
<i>N</i>	2353		

1.2. Multivariate logistic regression

Logistic regression			Number of obs = 2353			
			Wald chi2(3) = 44.42			
Log pseudolikelihood = -559.73745			Prob > chi2 = 0.0000			
			Pseudo R2 = 0.0467			
Employment	Odds Ratio	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
Gender (d)	4.152694	.9262379	6.38	0.000	2.682092	6.429634
Region (d)	1.181949	.2345071	0.84	0.399	.8011504	1.743745
Age	.9913835	.018162	-0.47	0.637	.9564181	1.027627
_cons	9.734616	4.378874	5.06	0.000	4.031133	23.50772

Logistic regression			Number of obs = 2353			
			Wald chi2(5) = 59.59			
Log pseudolikelihood = -554.84934			Prob > chi2 = 0.0000			
			Pseudo R2 = 0.0550			
Employment	Odds Ratio	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
Gender (d)	4.119659	.9170021	6.36	0.000	2.663121	6.372821
Region (d)	1.126241	.2297187	0.58	0.560	.7551134	1.679772
Age	.9915785	.01813	-0.46	0.644	.9566736	1.027757
Using Employment Center (d)	4.551364	4.60921	1.50	0.135	.6253475	33.12544
Working and studying combination (d)	1.642647	.3231816	2.52	0.012	1.117057	2.415535
_cons	6.687303	3.098638	4.10	0.000	2.696728	16.58307

Logistic regression			Number of obs = 2353			
			Wald chi2(9) = 65.47			
			Prob > chi2 = 0.0000			
Log pseudolikelihood = -553.11464			Pseudo R2 = 0.0580			
Employment	Odds Ratio	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
Gender (d)	4.166413	.9299423	6.39	0.000	2.690137	6.452831
Region (d)	1.102282	.2294455	0.47	0.640	.7330116	1.65758
Age	.9930402	.0183214	-0.38	0.705	.9577725	1.029607
Using Employment Center (d)	4.539703	4.628565	1.48	0.138	.6154094	33.48812
Working and studying combination (d)	1.616164	.3201435	2.42	0.015	1.096156	2.382861
Mothers' education (d)	.7814403	.2368518	-0.81	0.416	.4314194	1.415442
Father's education (d)	.8126049	.2209307	-0.76	0.445	.4769304	1.384535
Level of education (d)	1.027126	.4210713	0.07	0.948	.45991	2.293901
Field of education (d)	.7532803	.5445498	-0.39	0.695	.1826497	3.106663
_cons	7.19286	3.353702	4.23	0.000	2.884199	17.93817

2. General codes of questionnaires

2.1. Background questions

- A. Area: [1=urban or 2=rural]
- B. Age: [age from 15-29]
- C. Sex: 1=male 2=female
- D. Father's education [1= below high school; 0 = high school and above]

None	1
Elementary education	2
Vocational school (secondary)	3
Secondary school	4
Vocational school (post second)	5

University	6
Post-graduate studies	7

E. Mother's education [1= below high school; 0 = high school and above]

None	1
Elementary education	2
Vocational school (secondary)	3
Secondary school	4
Vocational school (post second)	5
University	6
Post-graduate studies	7

F. What is your highest level of completed formal education/training? [1= below high school; 0 = high school and above]

None	1
Elementary education	2
Vocational school (secondary)	3
Secondary school	4
Vocational school (post second)	5
University	6
Post-graduate studies/post-doctoral level	7

G. What field did you study? [1= social science; 0= natural science]

General Program	1
Education	2
Humanities and arts	3
Social sciences, Business and law	4
Science, Mathematics and computing	5
Engineering, Manufacturing, construction	6
Agriculture and veterinary	7
Health and welfare	8
Other services	9

2.2. Functional Questions

H. Did you ever work while you studied (not including apprenticeship)? [1=yes; 2=no]

Yes, during school season	1
Yes, outside school season (summer break...)	2
Yes, during and outside school season	3
No	4

I. Thinking about economic activities, which of the following situation best corresponds to your current situation? [1= working , 0= not working]

I am currently working for wage/salary, self-employed, or work for my family	1
I have never worked but I have looked for work	2

J. Did you receive any assistance from an employment office? (1=yes, 0=no)

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