

Vocational Training and Labour Market Transitions: A Randomised Experiment Among Cambodian Disadvantaged Young Adults*

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Abstract

We use a randomised experiment to provide evidence on the effects of vocational training programs for economically disadvantaged young adults in Cambodia. Individuals aged between 15 and 30 were randomly offered two-month, full-time training in housekeeping; we find that the program has positive but statistically insignificant effects on employment outcomes. We track program dropouts and find that their participation was mainly constrained by family obligations, lack of transportation to the training centre and temporary job opportunities. We also document the experience of working with disadvantaged young people in this randomised experiment. We observe that they need more support in addition to training. Job-readiness training, job placement assistance, career guidance and counselling might be needed to help them break into the labour market.

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1. Introduction

Lack of skills is thought to be a key determinant of unemployment, poverty and crime, and a key limitation on growth in developing countries. To increase the number of youth transitioning into formal employment, it is crucial that they are equipped with skills appropriate to present market needs. Vocational training programs are a potential approach to develop the employment skills of young people who have grown up in economically disadvantaged households or who have left formal schooling. Training also offers them a second chance to differentiate themselves from other dropouts in the labour market.

In many developing countries, the labour force is characterised by a large number of young and low-skilled people (aged 15-30). However, the majority are either unemployed or in low-paying informal jobs (Elder 2014). Thus, one of the targets of Sustainable Development Goal eight is to ensure that by 2020 the proportion of youth not in employment, education or training is substantially reduced. In Cambodia, about 23 percent of individuals between 15 and 30 years of age do not work. In an effort to mobilise more youths into employment, Cambodia's government has put in place several policies such as the Rectangular Strategy for Growth, Employment, Equity and Efficiency and the Strategic Plan 2006-10 of the Ministry of Labour and Vocational Training (MOLVT), incorporated social protection schemes into labour law and ratified international treaties such as the ILO Labour Conventions and similar policy instruments.

The Rectangular Strategy encapsulates the national vision for productivity improvement, agricultural diversification, private sector development, employment generation, capacity building and human resource development. Infrastructure investments and industrial policies have been established to accelerate the Rectangular Strategy. The MOLVT's vocational training programs aim to provide training to improve the job skills of young people in rural areas, thereby increasing the incomes and living standards of rural families, especially the poor. However, the country has to make concerted efforts if it is to catch up with other countries in the Association of South-East Asian Nations (ASEAN) in the context of the ASEAN Economic Community, especially in improving workforce skills. Alongside export-led industrial growth, technical vocational education and training (TVET) could be a crucial development tool for Cambodia. TVET is also considered a win-win approach to creating better work opportunities for young people. As private sector demand for skills in the working-age population has increased, the emphasis on skills training is important.

While training programs can be a potential solution to building the skills of young adults, evidence is scant on the effectiveness of training in improving labour market transitions among youth in developing countries. Experimental evidence is particularly scarce, and findings from recent randomised evaluations of vocational training programs are not so clear-cut. For instance, Attanasio, Kugler, and Meghir (2011) find that a vocational training program for disadvantaged youth in Colombia increased earnings and employment for women. In contrast, Card et al. (2011) find that a government-subsidised training program for low-income youth in urban areas of the Dominican Republic had no significant effect on employment outcomes, though they did find some improvement in earnings and the probability of health insurance cover, conditional on employment. A study by Cho et al. (2013) which focuses on the effects of vocational and entrepreneurial training for Malawian youth, finds that, although the training led to skills development, continued investment in human capital and improved well-being for men, there were no effects on labour market outcomes in the short run, and women gained

nothing at all from the training. Recent research by Hirshleifer et al. (2016) shows that a vocational training program for the unemployed in Turkey has a positive average impact on employment; however, the effect is small and statistically insignificant.

Experimental impact evaluation studies of vocational training programs are also a new research approach in Cambodia. This paper uses a randomised experiment to examine the effects of participating in a vocational training program targeted at young adults from low-income households. We focus on the impacts of the program on employment and barriers to taking up and completing the training. The intervention in this study was to provide two months' training in housekeeping for disadvantaged young people living in the capital, Phnom Penh. The program randomly offered training to about 70 percent of the registered individuals; the remaining participants were used as a control group.

This study makes several important contributions to the literature, to policy development and formulation and to capacity development of local researchers. First, little is known about the impact of vocational training programs in Cambodia. Regional economic integration and skill shortages make it important setting in which to evaluate the effectiveness of labour market training programs. Second, randomised field experiments can give clear insights into both short- and medium-term program impacts. The use of a randomised experimental design allows us to provide straightforward evidence for policy recommendations. Third, we also examine barriers to program take-up and completion. A better understanding of dropout behaviour can be useful for improving completion rates and easing constraints as part of more effective labour market policies. Finally, our research increases the stock of studies on vocational training in developing countries and builds local capacity for conducting evaluation studies, as well as complementing experimental evidence with survey data.

We combine pre-training and post-training data, collected five months after program completion, to estimate the impact of offering the training program (intent to treat effect) on employment outcomes using difference in differences approach. Then we use an instrumental variable two-stage least squares approach to identify the effect of receiving the training program (treatment on treated effect). The results show positive but statistically insignificant effects of both offering and completing the program on likelihood of obtaining employment and hours worked. Since there was a notable dropout rate, we included self-reported and social behaviour questions in the follow-up survey to identify individual barriers to take-up and completion of the program and to examine the association between the likelihood of completing the program with individual personality traits, socio-emotional abilities and risk and time preferences. Among the dropouts surveyed, the three main reasons for dropping out reported are family obligations, lack of transportation to the training site and obtaining work opportunities. We find that personality traits, self-esteem, intrinsic and extrinsic motivational orientations and risk and time preferences do not influence the completion rate. Finally, we document the challenges and lessons from working with economically disadvantaged young people and households in this randomised experiment, which might provide useful information and implications for more effective training programs and labour market policies in developing countries.

2. Background

2.1 Youth, education and employment in Cambodia¹

Youth, people aged 15-30 years, made up 33 percent of Cambodia's total population in 2014. Although this large proportion of young people is a potential, it also presents a challenge to ensure that youth unemployment is minimised.

Youths with higher education are likely to obtain better and higher-paid jobs than less educated youths because education can provide skills the market needs and make people more productive in their work. For Cambodia, the rates of youths completing secondary and high school are relatively low. The average years of schooling of youth aged 15-30 were 7.3 according to the Cambodia Socio-Economic Survey in 2014. Low-income students are most at risk for dropping out of school. Many poor families need youths to work at home or to earn money; the opportunity cost of going to school is simply too high. Young people thus often enter the labour force without basic skills. Most of the time, they work in low-paid, dangerous and short-term jobs.

The labour force participation rate of youth was about 77 percent in 2014. About 60 percent of total youth employed in 2014 were in waged jobs. Garments, construction and services currently play a crucial role in absorbing young Cambodians into jobs.

2.2 Training in Hospitality Sector

The rapid growth of tourism during the last decade has led to a high demand in tourism product and service provision, including transportation, travel agencies, entertainment and accommodation. The number of international tourist arrivals increased from 1.7 million in 2006 to 5 million in 2016 (Ministry of Tourism 2017). The total number of hotels in Phnom Penh, Sihanoukville, Siem Reap and Battambang, the main tourist areas, rose from 724 (32,486 rooms) in 2014 to 914 (39,382 rooms) in 2015 (Bonna Realty Group 2016).

The growth of the hotel industry creates job opportunities for young people, especially those living in areas which receive many tourists. The share of employment in the services sector rose from 26.5 percent in 2009 to 30.4 percent in 2014 (National Institute of Statistics 2015). Still, there are skill shortages and gaps in services. Job-specific skills and knowledge of foreign languages were identified as the two most essential skill gaps in tourism (Khieng, Madhur, and Chhem 2015). Also, among job applicants in accommodation businesses, 85 percent lack the required skills. Specifically, in hotels, guest houses, restaurants, recreation and entertainment, 15.1 percent and 31.8 percent respectively of room attendants/laundry workers and waiters were reported to lack the necessary skills (National Employment Agency 2013).

Some of the schools and centres providing vocational training in hospitality include Pour un Sourire d'Enfant (PSE), Sala Bai, Don Bosco School, EGBOK (Everything's Gonna Be OK) and Feeding Dream Center. PSE, a non-government organisation working with underprivileged children from the Stung Meanchey dump in Phnom Penh, provides two-year training in hospitality, including housekeeping. Ninety-eight percent of students graduating from PSE vocational training find employment opportunities. This is mainly due to its job placement program. Sala Bai, based in Siem Reap province and founded in 2002 by the French

¹ Thanks Ms Dalis Phann for her contributions to this section.

NGO Agir pour le Cambodge, provides training in hospitality to more than 1000 young people from underprivileged families, of whom 70 percent are girls. Don Bosco School, created and managed by the Don Bosco Foundation, trains disadvantaged youth for the hospitality industry. Since the opening of the Don Bosco Hotel School in 2007, about 400 students have graduated. Most managed to gain jobs in hospitality after finishing their two-year training course. EGBOK, located in Siem Reap province, gives underprivileged young people training and employment opportunities in hospitality, including housekeeping. It also has an internship program, training in life skills, social support, coursework and monthly sponsorship for students. The Feeding Dream Center provides hospitality training and free meals to more than 800 students in Siem Reap. Students are trained in housekeeping, guest service and food and beverage service for six months, followed by four months' internship at high end hotels and restaurants and two more months' training until students get a job placement.

3. Research design

3.1 Intervention description

The intervention in this study was to provide two months of training in housekeeping. The intervention targeted economically disadvantaged youth aged 15-30 residing in Phnom Penh City, able to read and write and willing to participate in the training. We collaborated with PSE, one of the most well-known vocational training institutes in Cambodia, to design and implement the program. PSE played a fundamental role in identifying and designing the training based on a project timeline and our targeted population.² Housekeeping was selected because there is a demand for it in tourism and it enables low-educated individuals to participate. Housekeeping also fits both men and women.

The two-month course consisted of two main components: classroom lectures and practical work at the PSE vocational training institute.³ Class sessions included lectures, demonstrations, simulations and role-playing; the total duration in classroom was approximately 180 hours. There were also about 180 hours of practice sessions, which provided opportunities for students in the program to conduct hotel-style room service practices. Classes ran from Monday to Friday from 7:00am to noon and from 2:00pm to 5:00pm, and on Saturday from 7:00am to noon. Students who completed the program received a certificate from PSE.

There were four rounds of training at different periods between June and September 2016 because it was more convenient for PSE to facilitate training classes and practical work for small groups. Participants received a school uniform, lunch, study materials and 3.5 kilograms of rice per week. PSE also offered a free shuttle bus service for participants who lived along its bus lines. Participants did not receive any stipend; however, students in rounds 3 and 4

² PSE usually provides two years of training in various fields, including hospitality. For this study, PSE designed a two-month program in housekeeping.

³ A one-month internship at hotels and apartments was initially included in the program. However, the internship arranged by PSE took time. PSE sent students to the hotels and apartments with which PSE has built good relations and partnership, and students had to go through tests and interviews by the hotel or apartment. Also, PSE proposed to increase the period of internship to two or three months to meet the requirements of the hotels and improve chances of employment after the internship. Thus, the internship program was not within the two-month training period. Only 18 students in the program were offered a paid internship; however, four of them did not accept the offer.

received a transport allowance of US\$1 per training attendance.⁴ Participants in all four rounds were exposed to the same teachers, curriculum and learning environment.

3.2 Recruitment and treatment assignment

Our targeted recruitment areas were slums in nine of 12 districts in Phnom Penh. We consulted with PSE on the targeted villages since it has worked very closely with disadvantaged youths and their families. PSE provided a list of villages in each district and a contact person in each village.

In the recruitment, enumerators contacted village chiefs or community heads for village guidance and visits. The advertisement of the program was distributed to households and posted in major places in the target areas for about three weeks before the training started. The advertising flyer was in Khmer and included associated information such as the name of the training institute, its location, the course in housekeeping, training duration and the extent of commitment required. Individuals were invited to register to have a chance of being selected for the training and were also told that they would receive a certificate at the end of the program.

We received registrations both during the village visits and by telephone. We asked individuals to provide name, age, gender, educational attainment and contact details when they registered. We received a total of 231 registered individuals in four rounds. In each round, those registered were randomly assigned in 70-30 proportion to treatment and control groups.⁵ After we assigned individuals, we informed about the outcome of their application; the treatment group was also informed of the training start date. There were 162 registered individuals offered training and 69 assigned to the control group.

3.3 Data collection

We conducted two surveys. The baseline data were collected either before the beginning of each course or during the first week of classes between June and September 2016. The baseline survey collected information on individual and household demographic characteristics, education, training experience and general labour market information. The follow-up survey was conducted five months after the conclusion of the training. Only 181 individuals were able to be interviewed for the baseline, 120 in the treatment group and 61 in the control group.

Of the baseline sample, 38.3 percent of those in the treatment group completed the program, 20 percent dropped out during the training and 41.7 percent did not show up from the first day of training (Figure 1). The majority of dropouts occurred at the beginning of the program. Therefore, we combined those who did not show up with those who dropped out in our analysis. The dropouts accounted for about 62 percent of the treatment group. Those who dropped out were from the older cohort and married and reported higher hours worked per week and monthly earnings in the baseline survey than those who completed the program. We further investigate the differences in section 4.2 and 4.3.

⁴ The transport allowance was given to participants in round 3 and 4 because there was a high absence rate of round 1 and 2 who began the training before round 3 and 4 and most students in round 3 and 4 live far away from PSE centre and in the locations where there is no shuttle bus line of PSE. Tuition of the training was paid by this project.

⁵ We control for recruitment effects in our analysis to eliminate any potential differences in each round of recruitment and training.

The follow-up interviews were carried out between January and March 2017 using the initial list of individuals interviewed in the baseline with updated contact information received during the training. The follow-up survey gathered information on labour market outcomes, training attendance, reasons for dropping out, program evaluation, self-esteem and motivation, personality traits, time and risk preferences and social risk behaviour. In total, 128 individuals were interviewed in the follow-up survey, corresponding to 71 percent of the total sample in the baseline. Some participants had migrated to work in other provinces or Thailand, and we could not obtain their new contact to conduct a telephone interview. A few participants had been in a rehabilitation centre while a few others, who dropped out or did not show up for the training from the first day, were not willing to participate in the follow-up survey. The attrition rate of 29 percent is comparable to attrition rates from other impact evaluations of vocational training programs in developing countries. The attrition rate of previous studies ranged from 18 to 36 percent. The highest attrition rate was up to 46 percent in Cho et al. (2013).

We check for the absence of differential attrition. We examine whether treatment and control individuals are attrited differentially in the follow-up survey and whether baseline characteristics predict attrition. Table 1 presents the marginal effects from a probit regression, where the dependent variable is Attrition, which takes a value 1 if the participants could not be traced during the follow-up survey and 0 otherwise. The result shows that being assigned to the treatment group does not have a statistically significant effect on the likelihood of attrition (column 1). We also include baseline characteristics and labour market outcomes in the regressions and find no relation between an offer of training and the likelihood of attrition (columns 2-5). We also find that baseline socio-economic characteristics have no influence on attrition. Selection into the sample thus do not appear to be a problem.

[Insert Table 1 here]

3.4 Baseline characteristics

Table 2 presents basic descriptive statistics of baseline characteristics and labour market outcomes for our final sample of 128 individuals. It also reports mean differences of these variables between treatment and control groups at baseline.

The average age of participants is 21 years, and males are 58 percent. Participants have completed an average of 7.3 years of schooling, and 24 percent of them are married. Participants have little work experience (less than 1 year on average), and only 21 percent have attended training courses before joining the program.

The primary outcome of interest is whether individuals are employed. We also observe other measures of labour market outcomes, including employment status, hours worked and monthly earnings. Employment status includes dummy variables “full-time/casual employment” and “self-employment” that took the value 1 if the characteristics are true and 0 otherwise. The variable “hours worked” indicates the number of hours worked during the last week, and “monthly earnings (0000 riels)” their total earnings in the last month. We impute zero for hours worked and monthly earnings if a participant reported being unemployed, an unpaid family worker, housewife/househusband or student. Table A1 in Annex A describes how our key variables were constructed.

Employment participation is very low at the baseline. Twenty percent of our sample are in paid employment and about 7 percent self-employed. The average hours worked per week and monthly earnings for the entire sample are about 12 hours and 127,800 riels (about USD32).

[Insert Table 2 here]

Given the nature of the randomised experiment, we also check whether the means of demographic characteristics and labour market outcomes are significantly different between treatment and control groups. Column 4 in Table 2 shows that baseline characteristics of participants in treatment and control groups do not differ, except for marital status and hours worked. About 17 percent of the participants in the treatment group and 39 percent in the control group are married. In our regression analysis, we control for marital status to account for this difference. The treated participants seemed to work fewer hours at baseline than participants in the control group (9.5 vs. 16.9 hours per week); however, the difference is at the 10 percent level of significance.

4. Results

In this section, we estimate the effects of offering the program (intent to treat) and the effects of receiving the program (treatment on treated). We show the mean differences in the follow-up survey in Table A2 in Annex A. We also discuss whether individual differences in personality traits, self-esteem, intrinsic and extrinsic motivations and risk and time preferences are correlated with the dropout rate.

4.1 Intent to treat effects

We measure the intent to treat (ITT) effects of the program using the difference in differences approach. We combine the availability of pre- and post-training data to estimate the causal effect of being offered the training on a range of labour market outcomes. We employ the following empirical specification:

$$Y_{ijt} = \beta_0 + \beta_1 TRAINING_i + \beta_2 t + \beta_3 TRAINING_i * t + \beta_4 X_i + \tau_j + \varepsilon_{ijt} \quad (1)$$

where Y_{ijt} is the outcome of interest for individual i in recruitment round j in time t . $TRAINING_i$ is a dummy variable that takes the value 1 if the individual was offered the training, 0 if the individual was assigned to the control group. t is a dummy variable that takes a value 1 if time is 2017 (that is a post-training period), 0 otherwise. A set of control variables X_i includes age, education, gender and marital status for individual i . τ_j is a fixed effect that captures differences in recruitment round and transport allowance and ε_{ijt} is an error term. In all regressions, standard errors are clustered at the individual level. We are particularly interested in examining the effect of being offered the training program. Thus, the coefficient of the interaction term (β_3) gives us the estimate of ITT.

In Table 3, we report results from the linear probability model (LPM) and the probit regressions.⁶ The results demonstrate that the program has no significant treatment effect on

⁶ For probit regressions, we use margins with contrast operator in Stata 14 to estimate the average interaction effects ($TRAINING_i * t$). This is to alleviate the concern that the interaction effect in probit regressions does not equal the marginal effect of the interaction term.

employment, hours worked or earnings in both LPM and probit regressions. Being assigned to the treatment group increases the likelihood of being employed by 11 percentage points and hours worked by about 4.7 hours, relative to the control group. However, the difference is not significantly different from zero. For earnings, the participants assigned to the treatment group earn 121,890 riels or USD30.50 per month less than those in the control group, but the difference is also not significantly different from zero. This is probably due to a sharp increase in average monthly earnings of the self-employed sample in the control group (from 314,000 to 926,000 riels). It is also more likely that the control group had more time to look for jobs or work while the treated individuals were in the training program.

[Insert Table 3 here]

4.2 Treatment on treated effects

To estimate the treatment on treated (TOT) effects, we use an instrumental variable two-stage least squares (IV-2SLS) approach. Specifically, we use assignment to treatment as instrument for vocational training attended to identify the effects of receiving the training on employment outcomes as follows:

$$R_i = \gamma_0 + \gamma_1 TRAINING_i * t + \gamma_2 t + \gamma_3 X_i + \delta_i + \tau_j + u_{ijt} \quad (2a)$$

$$Y_{ijt} = \alpha_0 + \alpha_1 \tilde{R}_i + \alpha_2 X_i + \tau_j + v_{ijt} \quad (2b)$$

where R_i is a dummy variable that takes the value 1 if the individual received/completed the training, 0 if the individual did not receive the treatment. Y_{ijt} is the outcome of interest for individual i in recruitment round j in time t . t is a dummy variable that takes a value 1 if time is 2017 (that is a post-training period), 0 otherwise. A set of control variables X_i includes age, education, gender and marital status for individual i . δ_i is individual fixed effect. τ_j is a fixed effect that captures differences in recruitment round and transport allowance and u_{ijt} and v_{ijt} are error terms. The coefficient (α_1) gives us the estimate of the effects of receiving the training (TOT).

Table 4 shows the results from IV estimates, where training participation is instrumented by the random assignment to training, on employment outcomes. Receiving the training increases the likelihood of getting employment, including likelihood of obtaining waged employment and being self-employed, and hours worked (column 1). Nevertheless, the impacts are not statistically significant. There is a small and insignificant negative impact of receiving the training on monthly earnings.

We also check whether the control group and the dropouts had attended other training programs during our study period. Only two individuals in the control group and one in the dropouts reported that they attended other courses. When we excluded them from the estimation, the results are unchanged (column 2).

[Insert Table 4 here]

4.3 Dropout behaviour

In the follow-up survey, we include some questions on why participants dropped out. The main reasons reported include: 1) family obligations (32 percent); 2) no transportation to the training institute (23.4 percent); 3) found work opportunities (17 percent); 4) no monetary incentive for participating in the training (8.5 percent); 5) lost interest in training/dissatisfied with training (6.4 percent); other reasons included sickness and migration (12.8 percent). We also report the reasons for dropouts by gender in Table 5.

[Insert Table 5 here]

Since there was a high dropout rate, we are interested in exploring whether the differences among individuals, including personality traits, self-esteem, intrinsic and extrinsic motivations and risk and time preferences, influenced the completion rate. These socio-emotional skills encompass behaviour and attitudes that can explain individual commitment, discipline and ability to work in a team. Psychological studies have documented the relationship between these socio-emotional skills and a range of labour market outcomes and educational trajectories.⁷ Risk and time preferences can measure individual risk attitude and patience toward what they do. In the follow-up survey, we included questions on self-reported attitudes to measure personality traits and motivations and behavioural measures for risk and time preferences (Annex B). Thus, we use linear probit regression of completion on behavioural measures to examine the differences.

We use questionnaire items from the World Bank's STEP Skills Measurement Program, which contains 26 questions designed to categorise people in terms of personality traits (openness to experience, conscientiousness, extraversion, agreeableness, neuroticism and grit) and behaviours and attitudes (decision making and hostile attribution bias). Broadly, openness to experience reflects appreciation for art, learning, intellectual curiosity and variety of experience. Conscientiousness describes the tendency to be organised, responsible and hard-working. Extraversion reflects sociability, tendency to seek stimulation in the company of others and talkativeness. Agreeableness reflects the tendency to act in a cooperative and unselfish manner. Neuroticism (emotional stability) refers to predictability and consistency in emotional reactions, with absence of rapid mood changes. Grit measures perseverance with long-term goals. Decision making refers to the manner in which individuals approach decision situations and hostile attribution bias describes the tendency to perceive hostile intent in others.

We examine socio-emotional abilities in terms of self-esteem and intrinsic and extrinsic motivations. We use the Rosenberg self-esteem index and items of intrinsic and extrinsic motivational orientations by Amabile et al. (1994), which explicitly assess individual differences in the degree to which adults perceive themselves to be intrinsically and extrinsically motivated.

We played a simple one-player game using multiple prices lists to measure risk and time preferences. For risk preference, we presented participants with a choice between risky and safe options, on 10 different rows or decisions. From row 1 to row 10, the chance of receiving the larger amount of money under both options increases. For time preference, participants

⁷ Acosta, Muller and Sarzosa (2015) discussed the role of socio-emotional skills in labour market outcomes and schooling decisions.

can choose between amounts they are paid today or paid the day after tomorrow (two days later).

The results in Panel A of Table 6 show that personality traits do not influence the program completion, except for extraversion and self-esteem. Those who are more extraverted and have higher self-esteem are likely to complete the program. We also find that individual intrinsic and extrinsic motivational orientations (Panel B of Table 6) and risk and time preferences (Panel C of Table 6) are not associated with completion of the program.

[Insert Table 6 here]

5. Bottlenecks and lessons

In this section we document the challenges and lessons from this randomised experiment, particularly the experience of working with economically disadvantaged youth and households exposed to violence, drugs and crime.

The following are key challenges we faced:

- 1) In the recruitment stage, people were looking for financial incentives to participate. Some young people said that they would rather collect garbage in the dump and sell it for daily earnings than invest their time to attend the training even though training would develop new skills and provide opportunities to increase their earnings in the long term. For our program, we could not offer monetary compensation for attending the training because we had to follow the standards of our collaborative training institute PSE. However, we provided 3.5 kilograms of rice per week, a free shuttle bus service and transport allowance of USD1 per training attendance for students who lived far from the training institute and had no access to the shuttle.
- 2) Some disadvantaged youths have been exposed to violence, illegal drugs and crime. They tend to have poor attitudes and traits or a lack of motivation, leading to a low commitment to invest in education or training. We found it difficult to communicate with and inform them about the training opportunity. We approached their family members and friends to introduce the training program to them, but we still received a lower registration rate than expected. Family support is also important to encourage disadvantaged youth to take up and complete the training and gain employability skills. In particular, young married women have to follow their husband's decision on training and work choices.
- 3) Disadvantaged young people tend to migrate to other provinces for short-term and temporary jobs both during and after training. This led to a high attrition rate in the program. Disadvantaged youth also seem not to be willing to spend time or effort in searching for job skills.
- 4) Lack of understanding about the research component of the collaborating training institute affected research design. For example, delays in administrative arrangements for class start date, uncooperative behaviour during recruitment and survey, and change in project leader of the training institute affected the planning and timing of the project.

From this randomised controlled trial, we document the lessons:

- 1) Training alone is not enough. Some young people's lack of experience of work or life and poor attitudes led to a frequent absence and lack of responsibility when they were recruited as staff after completing training. In addition to the training, most programs provided by NGOs include job-readiness training, job placement assistance, career guidance and counselling. Those NGOs also work very closely with families. These might be the reasons that they achieve high completion rates and high rates of gaining employment. However, our study does not test whether including those services would help the disadvantaged young people to break into the labour market.
- 2) It is a big challenge to prevent dropouts. From this experience, there are three factors to be considered: 1) providing training that responds to actual labour market needs; 2) ensuring strong collaboration from institutes/centres that provide the training; and 3) providing transportation and financial compensation in terms of saving or income generation activities to participants during their training attendance.

We observed that the program should meet labour market demand. For instance, training in housekeeping is in response to high employment opportunities in tourism. The program should also include job-readiness training and invest in a job placement team in the training institute or centre to work closely with participants. This helps to ensure the cost-effectiveness of the program.

Finding good collaborators to provide training is critical to cost-effectiveness. Training institutes or centres also play a vital role in helping participants to complete the training successfully and in following their progress during and after training. Training providers should demonstrate commitment to skills development and to working closely with the participants. Training institutes should also have strong industry linkages or partnerships; this is one of the advantages of PSE, our collaborating training institute.

Finally, without monetary incentives and transportation support, it is difficult to get young people to register and participate. Using savings as an incentive to encourage participants to complete the program might work better than weekly compensation alone. For example, if participants attend training for five days per week, they will receive a certain amount of money but will get it at the end of the program, with some extra for interest. Creating income generation activities during the training and providing transportation may also boost attendance and completion rates.

6. Conclusions and policy implications

Expanding labour market opportunities for youth through vocational education is widely considered to be a potentially effective approach. In this study, we use a randomised experiment to examine the effects of training on employment, hours worked per week and monthly earnings.

The results indicate that the program has no significant treatment effects on different employment outcomes. To address non-compliance issues, we use IV-2SLS to estimate the effects of receiving the training. Still, there are no statistically significant positive impacts of program completion. The small sample size might be one of the reasons that we could not

obtain statistically significant results. We also track program dropouts and find that lack of transportation and family obligations are main barriers for male participants to take up and complete the program, while female participants report family obligations and job opportunities as major constraints. And we show that personality traits, socio-emotional skills and risk and time preferences are not associated with dropout rates.

While more research with a larger sample size is needed to explore the generalisability of our findings to other contexts, we expect our results to improve understanding of the short-term effects of vocational training on labour market outcomes for youths in Cambodia as well in developing countries. To our knowledge, this study is the first randomised experiment in short-term vocational training with a focus on a specific skill (housekeeping) and for economically disadvantaged youth in Cambodia. We observe some possibilities to scale up the activities with some adjustments in the design. In sum, the lessons of this randomised experiment described in section 5 may be useful for improving completion rates in other programs and easing constraints to design more effective labour market policies. Family support and providing transportation assistance and income/saving generation activities during training are important to encourage disadvantaged youths to commit and invest in education or training. Moreover, economically disadvantaged young adults need more support in addition to training. Job-readiness training, job placement assistance, career guidance and counselling may be needed to help them break into the labour market.

It is hard for us to conclude that the normal two-year hospitality training programs run by various NGOs are better and can promote labour market outcomes, especially in the long run, since that was not in the scope of our study. Tracking impacts over longer time periods is needed to examine retention of the training programs and to draw concrete policy recommendations.

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Figure 1: Study Sample

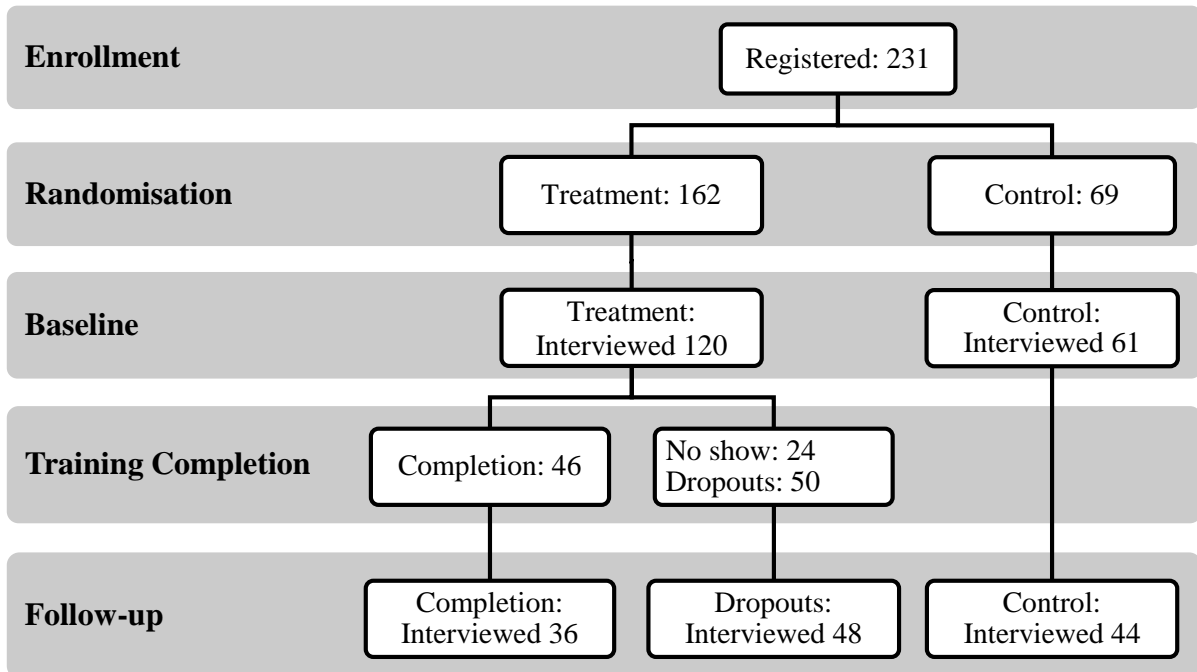


Table 1: Impact of Treatment on Likelihood of Attrition

	Attrition (1)	Attrition (2)	Attrition (3)	Attrition (4)	Attrition (5)
Treatment	0.020 (0.071)	0.034 (0.073)	0.035 (0.074)	0.033 (0.073)	0.030 (0.073)
Age		0.011 (0.010)	0.027 (0.096)	0.012 (0.010)	0.011 (0.010)
Age ²			-0.0004 (0.002)		
Education (years)		-0.006 (0.011)	-0.006 (0.011)	-0.003 (0.011)	-0.003 (0.011)
Male (=1)		0.042 (0.074)	0.040 (0.075)	0.045 (0.074)	0.029 (0.076)
Married (=1)		0.037 (0.089)	0.035 (0.090)	0.030 (0.089)	0.019 (0.089)
Work experience (months)				0.0004 (0.002)	0.0003 (0.002)
Training experience (=1)				-0.068 (0.088)	-0.059 (0.087)
Employed					-0.050 (0.227)
Hours worked					-0.002 (0.004)
Monthly earnings (0000 riels)					0.003 (0.004)
Observations	181	181	181	181	181

Notes: This table reports marginal effects from the probit estimations. The dependent variable is Attrition, which takes a value 1 if the participants could not be traced during the follow-up survey and 0 otherwise. Regressions include recruitment round dummies. Robust standard errors reported in parentheses.

Table 2: Baseline Characteristics

	Total Sample	Treatment	Control	Difference
	(1)	(2)	(3)	(4 = 2 - 3)
Basic Characteristics				
Age	20.93 [3.62]	20.70 [3.73]	21.36 [3.38]	-0.66 (0.67)
Male (=1)	0.58 [0.50]	0.61 [0.49]	0.52 [0.51]	0.08 (0.09)
Education (years)	7.34 [3.18]	7.49 [2.96]	7.05 [3.58]	0.44 (0.59)
Married (=1)	0.24 [0.43]	0.17 [0.37]	0.39 [0.49]	-0.22*** (0.08)
Work experience (months)	9.03 [20.62]	8.41 [22.33]	10.20 [17.07]	-1.80 (3.85)
Training experience (=1)	0.21 [0.41]	0.23 [0.42]	0.18 [0.39]	0.04 (0.08)
Labour Market Outcomes				
Employed	0.27 [0.44]	0.23 [0.42]	0.34 [0.48]	-0.11 (0.08)
Full-time/casual employment	0.20 [0.40]	0.18 [0.39]	0.23 [0.42]	-0.05 (0.07)
Self-employment	0.07 [0.26]	0.05 [0.21]	0.11 [0.32]	-0.07 (0.05)
Hours worked	12.04 [22.20]	9.48 [19.08]	16.93 [26.76]	-7.46* (4.09)
Monthly earnings (0000 riels)	12.78 [23.13]	11.58 [23.06]	15.07 [23.38]	-3.48 (4.31)
Observations	128	84	44	

Notes: Standard deviation reported in brackets and standard errors in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 3: Intent to treat Effects of the Program

Dependent variables	LPM (1)	Probit (2)
Employed	0.110 (0.106)	0.090 (0.104)
Full-time/ casual employment	0.100 (0.106)	0.099 (0.103)
Self-employment	0.010 (0.054)	0.014 (0.052)
Hours worked	4.712 (6.308)	
Monthly earnings (0000 riels)	-12.189 (8.821)	
Observations	256	256

Notes: This table reports the coefficients of variable ($TRAINING_i * t$). Regressions control for age, education, gender, marital status and recruitment round dummies. For probit regressions in column (2), we use margins with contrast operator in Stata 14 to estimate the average interaction effects. Robust standard errors clustered at the individual level are reported in parentheses.

Table 4: Treatment on treated Effects of the Program

Dependent variables	IV (1)	IV (2)
Employed	0.269 (0.257)	0.265 (0.255)
Full-time/ casual employment	0.235 (0.251)	0.232 (0.250)
Self-employment	0.034 (0.122)	0.034 (0.123)
Hours worked	11.456 (15.736)	10.709 (15.551)
Monthly earnings (0000 riels)	-30.247 (21.361)	-29.845 (21.440)
First-stage F stat.	55.338***	56.270***
Observations	256	250

Notes: Regressions control for age, education, gender, marital status and recruitment round dummies. Column 2 reports the results after excluding individuals in the control group and the dropouts who had attended other training programs during our study period. Two individuals in the control group and one in the dropouts reported that they attended other training courses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 5: Reasons for Dropping Out of the Program

Reasons	% of Dropout Sample		
	Total	Female	Male
Household/family obligation (including taking care of children/family members)	31.91	35.00	29.63
Had no transportation to training institute	23.40	10.00	33.33
Found work opportunities	17.02	30.00	7.41
No monetary incentive for participating in training	8.51	10.00	7.41
Lost interest in training/ dissatisfied with training	6.38	0.00	11.11
Other (got married, migration, sick)	12.80	15.00	11.11
Observations	47	20	27

Notes: Response of one dropout is missing.

Table 6: Differences in Personality Traits, Self-esteem, Intrinsic and Extrinsic Motivations and Risk and Time Preferences between Completers and Dropouts

Panel A: Personality Traits and Self-esteem:									
	Openness (1)	Conscientiousness (2)	Extraversion (3)	Agreeableness (4)	Neuroticism (5)	Grit (6)	Hostile (7)	Decision (8)	Self-esteem (9)
Completion vs. Dropouts	0.111 (0.099)	0.087 (0.108)	0.171* (0.094)	0.134 (0.101)	0.171 (0.112)	-0.040 (0.107)	-0.112 (0.076)	-0.019 (0.094)	0.249* (0.147)
Observations	84	84	84	84	84	84	84	84	84
Panel B: Intrinsic and Extrinsic Motivations:									
	Intrinsic motivation (1)	Extrinsic motivation (2)	Enjoyment Scale (3)	Challenge Scale (4)	Outward Scale (5)	Compensation Scale (6)			
Completion vs. Dropouts	0.010 (0.013)	0.017 (0.014)	0.015 (0.019)	0.012 (0.024)	0.018 (0.019)	0.025 (0.027)			
Observations	84	84	84	84	84	84			
Panel C: Risk and Time Preferences									
	Switching row in risk (1)	Switching row in time (2)							
Completion vs. Dropouts	-0.007 (0.016)	-0.007 (0.024)							
Observations	80	82							

Notes: This table reports marginal effects from the probit estimations. Dependent variable is in the first column. The number of observations is from the follow-up survey. The number of observations in Panel C excludes individuals who did not follow the guideline to make their decisions. Regressions controls for age, gender, education, marital status and recruitment round dummies. Robust standard errors clustered at the individual level are reported in parentheses.

Annex A:

Table A1: Definition of Outcome Variables

Variables	Definition
Employed	= 1 if the participant is employed (full-time, casual or self-employed), 0 otherwise
Full-time/ casual employment	= 1 if the participant is employed full-time or for casual wage, 0 otherwise
Self-employment	= 1 if the participant is self-employed/own-account worker
Hours worked	Number of hours worked during the last week
Monthly earnings (0000 riels)	Total earnings during the last month

Table A2: Mean Differences in Follow-up Survey

Main Variables	Treatment	Control	Difference	Completion	Control	Difference	Completion	Dropouts	Difference
	(1)	(2)	(3=1-2)	(4)	(5)	(6=4-5)	(7)	(8)	(9=7-8)
Basic Characteristics									
Age	21.26 [3.72]	21.84 [3.42]	-0.58 (0.67)	19.81 [3.82]	21.84 [3.42]	-2.04** (0.81)	19.81 [3.82]	22.35 [3.27]	-2.55*** (0.77)
Male (=1)	0.61 [0.49]	0.52 [0.51]	0.08 (0.09)	0.64 [0.49]	0.52 [0.51]	0.12 (0.11)	0.64 [0.49]	0.58 [0.50]	0.06 (0.11)
Education (years)	7.50 [2.98]	7.09 [3.67]	0.41 (0.60)	7.53 [2.76]	7.09 [3.67]	0.44 (0.74)	7.53 [2.76]	7.48 [3.16]	0.05 (0.66)
Married (=1)	0.18 [0.39]	0.36 [0.49]	-0.19** (0.08)	0.06 [0.23]	0.36 [0.49]	-0.31*** (0.09)	0.06 [0.23]	0.27 [0.45]	-0.22** (0.08)
Labour Market Outcomes									
Employed	0.73 [0.45]	0.73 [0.45]	0.00 (0.08)	0.72 [0.45]	0.73 [0.45]	-0.01 (0.10)	0.72 [0.45]	0.73 [0.45]	-0.01 (0.10)
Full-time/casual employment	0.67 [0.47]	0.61 [0.49]	0.05 (0.09)	0.67 [0.48]	0.61 [0.49]	0.05 (0.11)	0.67 [0.48]	0.67 [0.48]	0.00 (0.11)
Self-employment	0.06 [0.24]	0.11 [0.32]	-0.05 (0.05)	0.06 [0.23]	0.11 [0.32]	-0.06 (0.06)	0.06 [0.23]	0.06 [0.24]	-0.01 (0.05)
Hours worked	36.10 [28.61]	38.70 [28.85]	-2.60 (5.34)	37.21 [27.46]	38.70 [28.85]	-1.50 (6.35)	37.21 [27.46]	35.27 [29.70]	1.94 (6.34)
Monthly earnings (0000 riels)	35.04 [25.76]	50.40 [54.63]	-15.37** (7.10)	34.75 [24.77]	50.40 [54.63]	-15.65 (9.85)	34.75 [24.77]	35.25 [26.74]	-0.50 (5.71)
Observations	84	44		36	44		36	48	

Notes: Standard deviation reported in brackets and standard errors in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%

Annex B: Behaviour Questions

PERSONALITY TRAITS

	Please circle the one number for each question that comes closest to reflecting your opinion about it. (Circle one answer only)	Almost Never	Some of the Time	Most of the Time	Almost Always
1	Are you talkative?	1	2	3	4
2	When doing a task, are you very careful?	1	2	3	4
3	Do you come up with ideas other people haven't thought of before?	1	2	3	4
4	Do you like to keep your opinions to yourself? Do you prefer to keep quiet when you have an opinion?	1	2	3	4
5	Are you relaxed during stressful situations?	1	2	3	4
6	Do you finish whatever you begin?	1	2	3	4
7	Do people take advantage of you?	1	2	3	4
8	Do you work very hard? For example, do you keep working when others stop to take a break?	1	2	3	4
9	Do you forgive other people easily?	1	2	3	4
10	Do you tend to worry?	1	2	3	4
11	Are you very interested in learning new things?	1	2	3	4
12	Do you prefer relaxation more than hard work?	1	2	3	4
13	Do you enjoy working on things that take a very long time (at least several months) to complete?	1	2	3	4
14	Do you enjoy beautiful things, like nature, art and music?	1	2	3	4
15	Do you think about how the things you do will affect you in the future?	1	2	3	4
16	Are you very polite to other people?	1	2	3	4
17	Do you work very well and quickly?	1	2	3	4
18	Do you get nervous easily?	1	2	3	4
19	Are you generous to other people with your time or money?	1	2	3	4
20	Are you outgoing and sociable, for example, do you make friends very easily?	1	2	3	4
21	Do you think carefully before you make an important decision?	1	2	3	4
22	Are people mean/not nice to you?	1	2	3	4
23	Do you ask for help when you don't understand something?	1	2	3	4
24	Do you think about how the things you do will affect others?	1	2	3	4
25	Do you like to share your thoughts and opinions with other people, even if you don't know them very well?	1	2	3	4
26	Do you get very upset in stressful situations?	1	2	3	4

SELF-ESTEEM AND MOTIVATION EVALUATIONS

A. Self-esteem					
		Strongly Disagree	Disagree	Agree	Strongly Agree
	Please circle the one number for each question that comes closest to reflecting your opinion about it. (Circle one answer only)				
1	On the whole, I am satisfied with myself.	1	2	3	4
2	At times I think I am no good at all.	1	2	3	4
3	I feel that I have a number of good qualities.	1	2	3	4
4	I am able to do things as well as most other people.	1	2	3	4
5	I feel I do not have much to be proud of.	1	2	3	4
6	I certainly feel useless at times.	1	2	3	4
7	I feel that I'm a person of worth, at least on an equal plane with others.	1	2	3	4
8	I wish I could have more respect for myself.	1	2	3	4
9	All in all, I am inclined to feel that I am a failure.	1	2	3	4
10	I take a positive attitude toward myself.	1	2	3	4
B. Intrinsic Motivations					
		Strongly Disagree	Disagree	Agree	Strongly Agree
	Please circle the one number for each question that comes closest to reflecting your opinion about it. (Circle one answer only)				
11	I enjoy trying to solve difficult problems.	1	2	3	4
12	I enjoy simple, straightforward tasks.	1	2	3	4
13	I enjoy tackling problems that are completely new to me.	1	2	3	4
14	What matters most to me is enjoying what I do.	1	2	3	4
15	It is important for me to be able to do what I most enjoy.	1	2	3	4
16	The more difficult the problem, the more I enjoy trying to solve it.	1	2	3	4
17	I want my work to provide me with opportunities for increasing my knowledge and skills.	1	2	3	4
18	I like to figure things out for myself.	1	2	3	4
19	No matter what the outcome of a project, I am satisfied if I feel I gained a new experience.	1	2	3	4
20	Wanting to know more is the driving force behind much of what I do.	1	2	3	4
21	I prefer work I know I can do well over work that goes beyond what I can manage.	1	2	3	4
22	I am more comfortable when I can set my own goals.	1	2	3	4
23	I enjoy doing work that is so involving that I forget about everything else.	1	2	3	4
24	It is important for me to have space to express myself.	1	2	3	4
25	I want to find out how good I really can be at my work.	1	2	3	4

C. Extrinsic Motivations					
	Please circle the one number for each question that comes closest to reflecting your opinion about it. (Circle one answer only)	Strongly Disagree	Disagree	Agree	Strongly Agree
26	I am not that concerned about what other people think of my work.	1	2	3	4
27	I prefer having someone set clear goals for me in my work.	1	2	3	4
28	I am very much aware of the income goals I have for myself.	1	2	3	4
29	To me, success means doing better than other people.	1	2	3	4
30	I am very much aware of the career promotion goals I have for myself.	1	2	3	4
31	I am less concerned with what work I do than what I get for it.	1	2	3	4
32	I am concerned about how other people are going to react to my ideas.	1	2	3	4
33	I rarely think about salary and promotions.	1	2	3	4
34	I believe that there is no point in doing a good job if nobody else knows about it.	1	2	3	4
35	I am strongly motivated by the money I can earn.	1	2	3	4
36	I prefer working on projects with clearly specified procedures.	1	2	3	4
37	As long as I can do what I enjoy, I am not that concerned about exactly what I am paid.	1	2	3	4
38	I am strongly motivated by the recognition I can earn from other people.	1	2	3	4
39	I have to feel that I am earning something for what I do.	1	2	3	4
40	I want other people to find out how good I really can be at my work.	1	2	3	4

TIME PREFERENCE

For each decision number (1 to 10) below, decide the AMOUNTS you would like for sure today AND in 2 days by circling A or B.			
No.	Option A (Pays amount below today)	Option B (Pays amount below in 2 days)	Your Choice (Circle A or B)
1	2,000 riels +10% interest= Today	2,200 riels Next 2 days	A B
2	2,000 +20% interest= Today	2,400 Next 2 days	A B
3	2,000 +30% interest= Today	2,600 Next 2 days	A B
4	2,000 +40% interest= Today	2,800 Next 2 days	A B
5	2,000 +50% interest= Today	3,000 Next 2 days	A B
6	2,000 +60% interest= Today	3,200 Next 2 days	A B
7	2,000 +70% interest= Today	3,400 Next 2 days	A B
8	2,000 +80% interest= Today	3,600 Next 2 days	A B
9	2,000 +90% interest= Today	3,800 Next 2 days	A B
10	2,000 +100% interest= Today	4,000 Next 2 days	A B

Decision switching line: _____ (Completed by Interviewer)

RISK PREFERENCE

No.	Option A	Option B	Your Choice (Circle A or B)
1	R 3,000 if card shows 1 R 2,000 if card shows 2 3 4 5 6 7 8 9 10	R 5,000 if card shows 1 R 500 if card shows 2 3 4 5 6 7 8 9 10	A B
2	R 3,000 if card shows 1 2 R 2,000 if card shows 3 4 5 6 7 8 9 10	R 5,000 if card shows 1 2 R 500 if card shows 3 4 5 6 7 8 9 10	A B
3	R 3,000 if card shows 1 2 3 R 2,000 if card shows 4 5 6 7 8 9 10	R 5,000 if card shows 1 2 3 R 500 if card shows 4 5 6 7 8 9 10	A B
4	R 3,000 if card shows 1 2 3 4 R 2,000 if card shows 5 6 7 8 9 10	R 5,000 if card shows 1 2 3 4 R 500 if card shows 5 6 7 8 9 10	A B
5	R 3,000 if card shows 1 2 3 4 5 R 2,000 if card shows 6 7 8 9 10	R 5,000 if card shows 1 2 3 4 5 R 500 if card shows 6 7 8 9 10	A B
6	R 3,000 if card shows 1 2 3 4 5 6 R 2,000 if card shows 7 8 9 10	R 5,000 if card shows 1 2 3 4 5 6 R 500 if card shows 7 8 9 10	A B
7	R 3,000 if card shows 1 2 3 4 5 6 7 R 2,000 if card shows 8 9 10	R 5,000 if card shows 1 2 3 4 5 6 7 R 500 if card shows 8 9 10	A B
8	R 3,000 if card shows 1 2 3 4 5 6 7 8 R 2,000 if card shows 9 10	R 5,000 if card shows 1 2 3 4 5 6 7 8 R 500 if card shows 9 10	A B
9	R 3,000 if card shows 1 2 3 4 5 6 7 8 9 R 2,000 if card shows 10	R 5,000 if card shows 1 2 3 4 5 6 7 8 9 R 500 if card show 10	A B
10	R 3,000 if card shows 1 2 3 4 5 6 7 8 9 10	R 5,000 if card shows 1 2 3 4 5 6 7 8 9 10	A B

Decision switching line: _____ (Completed by Interviewer)