Education and transition to work: Evidence from Vietnam, Cambodia and Nepal

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ABSTRACT

Against the background of education expansion and economic transformations, little is known about how education shapes the transition to work in developing countries. Drawing on the cases of Vietnam, Cambodia and Nepal, this study examines the association between education and the timing and quality of transition to work. In Vietnam and Cambodia, school enrolment delays the transition to first paid employment, but upon leaving school, higher education attainment is associated with faster rate of transition. The education gradient is even stronger in probabilities and rates of transition to first stable, long-term employment. In Nepal, school enrolment does not preclude transition to paid employment, and the relation between education attainment and transition to work differs significantly by gender.

1. Introduction

Education expansion, coupled with the growing importance of knowledge and skills in the labour market, have the potential to transform the timing of life course transitions. In industrialized countries, as young people stay in school longer in order to acquire the necessary skills and credentials, increase in school-leaving age delays the entrance into the labour force, one of the markers of adulthood (Furstenberg, 2013; Shanahan, 2000). Upon completing school, higher education attainment is associated with higher rate of transition to better first jobs (Mills and Präg, 2014; Müller and Gangl, 2003; Ryan, 2001; Schoon and Silbereisen, 2009; Shavit and Muller, 1998), although the strength and nature of the association vary across countries (Brzinsky-Fay, 2007; Müller and Gangl, 2003; Ryan, 2001; Shavit and Muller, 1998). In contrast to the extensive research set in the industrialized countries, less is known about the timing and quality of transition to work in developing countries against the background of rapid education expansion and economic transformations. Even less is known about whether the relation between education and transition to work converges or diverges across developing countries, and how institutional differences in education and labour markets contribute to the cross-country variations.

Transition to adulthood might have a distinct pattern in the developing context from the industrialized world (Grant and Furstenberg, 2007). On one hand, children in the developing world run the risk of transitioning 'too early' (World Bank, 2006, 96). 168 million children were estimated to have entered work under age 15 (International Programme on the Elimination of Child Labour (IPEC) 2015). On the other hand, youths who are stuck in a period of 'waithood' between childhood and adulthood have become a prevalent phenomenon in various parts of the developing world (Dhillon and Yousef, 2011; Honwana, 2012). In Latin America alone, about 19% of the total youth population was estimated to be neither in employment nor in education or training (NEET), and the number of young male NEET had grown by 46% between 1992 and 2010 (Navarro et al., 2016). Among the NEET population are children who have dropped out of school early and remained idle since (Utomo et al., 2014; Bacolod and Ranjan, 2008), as well as young people who are educated and yet unemployed (Jeffrey, 2010; Mains, 2011). These unique challenges raise the need for a better understanding of the role of education in shaping when and how children and youths enter the labour market in contexts where poverty, school and work are intricately linked.

This study draws on cases of Vietnam, Cambodia and Nepal to investigate how education is associated with the timing and quality of transition to work. Conceptually, I separate the effects of school enrolment from education attainment (Thornton et al., 1995; Blossfeld and Huinink, 1991; Raymo, 2003; Yabiku and Schlabach, 2009). I also examine transitions to two distinct definitions of 'first employment': paid employment and stable long-term employment, which excludes informal and irregular employment (International Labour Office, 2015, 43). Empirically, I draw on retrospective longitudinal survey data collected across the three countries and apply a series of parametric and semi-parametric survival models that take into account the right-censored cases (i.e. children and youths who had not yet entered employment at the time of survey). Past research was limited in using age-specific period measures of education and employment status that mix

different cohorts of youths (National Research Council and Institute of Medicine, 2005, 288; Ersado, 2005). Cross-sectional data can also generate different employment levels depending on the time interval used in the analysis (Hoek et al., 2009). Moreover, with standardized measurement and definitions of employment applied across countries, I am able to conduct more valid cross-country comparisons than previous research (Nahar et al., 2013; National Research Council and Institute of Medicine, 2005; Byrne and Strobl, 2004).

2. Conceptual framework

2.1. School enrolment and transition to work

According to the modernity argument, as labour market changes and the role of the state becomes more pronounced in people's lives, life course transitions become less controlled by the family and increasingly shaped by structured institutions (Shanahan, 2000). Specifically, education expansion and the movement from agricultural to knowledge-based economies are main contributing factors to protracted transition to work over time (Furstenberg, 2013). Using data collected in Burkina Faso, Calvès and Schoumaker (2004) found a significant delay in the median age of transition to first paid employment across cohorts of educated men but not among uneducated men, suggesting that longer duration of schooling over time contributes to the delay in labour market entry. In the Chitwan Valley of Nepal, averaged across cohorts, school enrolment tends to delay the transition to first paid employment; over time, the enrolment effect on delaying the transition to work becomes stronger, reflecting the increasing conflict between student and employee roles (Yabiku and Schlabach, 2009).

Although education expansion and compulsory school attendance have led to more standardized age patterns of transitions to labour force across industrialized countries (Shanahan, 2000; Furstenberg, 2013), the age patterns might be more varied across developing countries due to the varying strengths of institutions that could potentially structure the life course, such as schools and the labour market (Grant and Furstenberg, 2007; Edmonds and Pavcnik, 2005; Park et al., 2010). Enforcement of policies such as compulsory education and bans on child labour remains challenging due to resource constraint and their effect on reducing child work doubtful (Edmonds and Pavcnik, 2005). Meanwhile, household poverty, credit constraints, together with weak local institutions such as schools, continue to provide economic incentives for children to enter work early (Edmonds and Pavcnik, 2005). Consequently, unlike the industrialized countries, not only do children in many developing countries transition to work at a much earlier age (World Bank 2006, 96; International Programme on the Elimination of Child Labour (IPEC) 2015), but the sequence between school-leaving and job entry is also more varied (National Research Council and Institute of Medicine, 2005; Juárez and Gayet, 2014). According to estimates using UNICEF Multiple Indicator Cluster Surveys covering 124 million children aged 5 to 14 from 36 developing countries, as much as 73% of children who attend school also work, and 74% of children who work attend school (Edmonds and Pavcnik, 2005).

Whether school enrolment precludes labour market participation and delays the transition to work in part depends on the cost and quality of schooling. While most previous studies theorize child labour and schooling as competing activities of children's time (Ersado, 2005; Bacolod and Ranjan, 2008; Ray, 2002; Fafchamps and Wahba, 2006; Edmonds and Pavcnik, 2005), fieldwork has challenged the assumption of school-work trade-off. Recent studies argue that child work enables and, in some cases, provides the only means for survival and funding further education (Maconachie and Hilson, 2016; Hilson, 2012, 2010). These studies suggest that in contexts where education is valued but remains costly, rather than delaying the transition to work, school enrolment actually necessitates early transitions to work. On the other hand, poor school qualities and short instructional times make school attendance and work more compatible. Reduced institutional time due

to widespread teacher absences is symptomatic of weak schools (Chaudhury et al., 2006; Benavot and Gad, 2004). Shorter time spent in school also indicates the inadequacy of school resource and students' opportunity to learn (Baker et al., 2004), directly correlated with lack of school infrastructure, teacher qualities and lower achievement (Glewwe et al., 2011; Lavy, 1996; Pedro and Christel, 2007). Taken together, in developing countries with weak labour market institutions and large informal sectors, I expect the effect of school attendance on timing of transition to paid labour market to vary by cost and quality of education: high cost and poor quality of schooling not only provide incentives for child work but also make school and work more compatible.

2.2. Education attainment and transition to work

Among school leavers, education attainment provides the main resource for successful school-to-work transition (Mills and Präg, 2014; Müller and Gangl, 2003; Ryan, 2001; Schoon and Silbereisen, 2009; Shavit and Muller, 1998). Within cohort, higher levels of education attainment among school leavers have been linked to faster transition to work in developing contexts as diverse as Chitwan Valley, Nepal (Yabiku and Schlabach, 2009), Cape Town, South Africa (Lam et al., 2007) and Ouagadougou, Burkina Faso (Calvès et al., 2013). In contrast, among youths who had dropped out of school at age 16 or below in Jakarta, Indonesia, less than a quarter of early school-leavers worked in the immediate year following school exit, and about 30% neither worked nor studied between the ages of 12 to 18 (Utomo et al., 2014). Similarly, among the out-of-school and out-of-work youths aged 19 to 24 in Latin America, 60% have failed to complete secondary school (Navarro et al., 2016).

The specific magnitude and direction of the association between education and transition to work depend on the labour market context, especially in terms of the relative demand and supply of education and skills. Studies of youth unemployment in sub-Saharan Africa and Middle East (Calvès and Schoumaker, 2004; Serneels, 2007; Dhillon and Yousef, 2011) have pointed to the lack of public sector jobs relative to the rapidly increasing number of educated youths with high aspirations. Meanwhile, in contexts with abundant job opportunities, poor education quality and the mismatch between education and labour market demand might still leave school leavers ill-prepared for the transition to work (Garcia and Fares, 2008; Lam et al., 2007; Dhillon and Yousef, 2011; Boccanfuso et al., 2015).

Within countries, the effect of education attainment on the rate of transition to work might differ for males and females. Even though gender gaps have been closing in education attainment across developing countries (Grant and Behrman, 2010), the persisting gendered division of labour and cultural norms might collide with the changes and opportunities created through increasing education among young women (Arnot et al., 2012; Furstenberg, 2013). Continuing pressure to specialize in domestic responsibilities might lead women of the same education attainment as their male counterparts to settle for worse jobs (Blossfeld et al., 2015). At the same time, women and men's education might be rewarded in the labour market differently (Aslam, 2009; Kingdon, 1998) due to occupational segregation and discrimination in the workplace (Blossfeld et al., 2015). For example, Malhotra and DeGraff (1997) found that for women in Sri Lanka, higher education levels lead to greater labour force participation but highly educated women are more likely to be unemployed than employed, as more education does not make women more marketable on the job market. The same study found that, in addition to labour market demand and supply, family and cultural norms also shaped the behaviour of women. In Egypt, in contrast to a positive relation between education and transition to work for men, Heyne and Gebel (2016) found a downward trend in the transition probability for higher educated women, explained by the legal and cultural barriers to jobs in the private sectors faced by women but not men (Dhillon and Yousef, 2011).

Aside from the timing of the transition, education attainment is also

associated with the type of employment young people enter: school leavers with secondary and tertiary education are more likely to participate in formal wage employment, whereas those with primary education or lower are more likely to engage in self-employment or agricultural activities (Reardon et al., 2001; Filmer and Fox, 2014; Zhang et al., 2002). Education is rewarded differently in and outside the formal wage employment. For example, Honig (1996) found that formal education is not as beneficial as non-formal education among the self-employed in the low tier of the informal sector of Jamaica, whereas in the upper tier, the return to formal schooling is considerably higher. An analysis of self-employment of 74 developing countries (Gindling and Newhouse, 2014) found that while education is strongly correlated with success, better-educated entrepreneurs may be successful for a variety of reasons not directly related to education. Different types of employment also have different job search and matching processes. With no unemployment insurance and limited family income, early school leavers with lower education often cannot afford the cost of the institutionalized search method used by the formal wage sector, including the long search period required, and are thus more likely to search in the informal sector, which relies more on informal search method (Udall and Sinclair, 1982; Manacorda et al., 2017).

2.3. Summary and research questions

Education has the potential to shape the timing of transition to work: school enrolment might delay transition to work; among school leavers, education attainment might accelerate the transition to work and increase the probabilities of entering more stable, regular jobs. However, existing research also suggests that the specific direction and strength of the association between education status and transition work might vary by institutional context across countries, especially the cost and quality of schools, as well as the demand for education in the labour market. Within countries, males and females might also experience the transition differently even with the same education attainment.

In this study, I draw on the cases of Vietnam, Cambodia and Nepal to investigate the relation between education and transition to work. Specifically, I seek to answer the following questions: How are school enrolment and education attainment associated with the timing of transition to first paid employment? Does the association between education status and timing of transition differ by gender? Is education status associated with the type of first paid employment?

Because the nature and quality of paid employment can vary greatly, in the second part of the analysis, I define an alternative endpoint of transition that excludes informal, irregular employment: entry into the first stable, long-term employment. Using this more stringent definition of 'first job', I investigate the relation between education status and timing of transition and whether the relation differs by gender.

3. Study sites

Because the relation between education and transition to work can vary across countries by institutional differences, I select Vietnam, Cambodia and Nepal as my study sites for their heterogeneity in education access and quality, as well as the varying demand for education in the labour market. The three countries also have the highest prevalence of child labour in Asia (Khan and Lyon, 2015; Understanding Children's Work (UCW) Programme, 2015), allowing me to examine the sequence between school-leaving and job entry.

Vietnam has attained lower-middle income status in 2010 and continues to grow at an annual rate of 7%. Education has played a key role in the success of Vietnam's economic growth and poverty reduction (Rutkowski et al., 2014). Vietnam has near universal primary attendance, and the lower secondary net attendance rate is about 84%. In the 2012 Programme for International Student Assessment (PISA), Vietnam

has outperformed developed countries including the US and the UK (Parandekar and Sedmik, 2016).

In comparison, the rising demand for skills in Cambodia are contrasted by slow increases or even some declines in the supply (Gropello et al., 2010). Although Cambodia has achieved impressive growth by taking advantage of the low-cost and abundant labour over the past decades, education and skills shortage have posed constraints to economic diversification and structural transformation (Asian Development Bank, 2015). Low enrolment, high dropout rates and grade repetitions prevail in the public education system (Tan, 2007). Expansion in primary education has not been matched at the lower secondary level, where the net enrolment rate is only 44%.

Unlike Vietnam and Cambodia, economic growth in Nepal has been stagnant for several decades. The labour force has been growing faster than the rate of job creation (Islam, 2014), although massive out-migration in response to limited opportunities at home has improved labour market prospects for those who remain (Nayar et al., 2011). While demand for skilled workers is small, the increase in supply has been even smaller (Nayar et al., 2011). Despite the progress in getting children into primary school, the quality of education is poor and progression rate low (Shiva et al., 2010). Coupled with limited labour market opportunities, low education attainment and quality have prevented schooling from translating into either better life chances for individuals or productivity and economic growth (Dundar et al., 2014).

To the extent that the sequence between school-leaving and transition to work depends on the cost and quality of schools, I expect school enrolment to delay the timing of transition to work in Vietnam and transition to work during school enrolment to be more pervasive in Cambodia and Nepal. Given the higher demand for secondary and tertiary education in the labour market, I expect a stronger education attainment gradient in the probability and rate of transition to work in Vietnam and Cambodia, compared to Nepal where high-skilled job opportunities are more limited.

4. Data and methods

4.1. Data

I draw on data from a unique cross-national survey study, School to Work Transition Surveys (SWTS), conducted by the ILO. In each of the three case countries, the survey selected a nationally representative sample of young people aged 15 to 29. The Vietnamese sample, covering twenty out of 63 total provinces throughout the country, was a subsample drawn from the nationally representative Vietnam Household Living Standards Survey (VHLSS). The Cambodian sample was drawn from the enumeration areas of Cambodia Labour Force and Child Labour Survey, covering ten Capital/Provinces of Cambodia. The Nepalese sample was drawn using a three-stage stratified design: in the first stage, 30 rural districts and urban municipalities are selected from six regions (rural Mountain, rural Hill, rural Terai, Kathmandu Valley, urban Hill and urban Terai); in the second stage, wards were selected from each district/municipality using Probability Proportional to Size; and in the final stage, 20 households were sampled from each selected ward using systematic random sampling. More details on survey design and implantation are available for each country (Anh et al., 2015; Kanol et al., 2013; Serrière and Centre for Economic Development Administration, 2014).

In each country, the standardized survey instrument collected information on youths' individual and household background characteristics, education and employment histories and current employment activities. The retrospective history of education and work activities provides valuable information on the timing of transition to work. Specifically, each individual provided information on date starting each job, type of job, date leaving school, and the highest level of education attainment before leaving school. Moreover, standardized definitions and measures of employment make it possible to compare the timing

and nature of the transition to work cross-nationally.

4.2. Measurement

4.2.1. Employment

Paid employment is distinguished from unpaid employment, such as working as an unpaid family member in the family business or farm, or engaging in home duties. Apprenticeship and internship are excluded from paid employment. Paid employment is further categorized into *self-employment*, including those who work as 'employer', 'own-account worker' or 'member of a producers' cooperative', and *wage employment* ('work for wage/salary with an employer'). Among wage employment, I distinguish employment with no written contract, short-term contract (less than a year) and long-term contract (greater than or equal to a year).

In the analysis presented below, I first examine the transition to first paid employment. I then zoom in on first wage employment with a long-term written contract (hereafter referred to as '*stable, long-term employment*') as an alternative endpoint of the transition and a stricter definition of 'first employment'.

4.2.2. Education

The independent variable of interest is a time-varying covariate with five categories, coded depending on the status at a given time: in-school, out-of-school with less than primary education, out-of-school with primary education, out-of-school with secondary education and out-of-school with tertiary education.[1]

4.2.3. Controls

Other covariates include sex, age at the time of the survey (centred at the mean), and rural/urban residence.

4.3. Sample description

One limitation of the survey is that work histories were not collected for youths who were still attending school at the time of the survey. As a result, I have to limit my analytic sample to youths who were no longer attending school at the time of the survey. One consequence is that older cohorts were overrepresented in the analytic samples (mean age at the time of the survey is about 25 years old across the three samples). I therefore adjust for cohort in the regression models. In addition, the following analysis assumes that these youths who were still attending school at the time of the survey had followed the same path of transition as their peers who had left school by the time of the survey. To test this assumption, I used logistics regressions to examine if there is a significant difference in the odds of having worked while in school between individuals who were attending school at the time of the survey (out of the analytic sample) and those who were no longer attending school (in the analytic sample), controlling for cohort. Results (Appendix A Table A1) showed that the assumptions hold in Nepal and Cambodia, but in Vietnam, youths who were still attending school at the time of the survey had greater odds of having worked while studying than those who had left school. This means that the analytic sample used for Vietnam provides a lower bound for probability of transition to work before leaving school.

The final analytic sample sizes are 1772, 2451 and 1374, respectively, for Vietnam, Cambodia and Nepal. Table 1 presents the weighted descriptive statistics of the analytic samples. There are slightly more males than females in the Vietnamese and Nepalese samples, whereas females account for almost 60% of the Cambodian sample. Rural youths

Table 1
Weighted descriptive statistics of analytic samples.
Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2014 and Nepal 2013

	Vietnam		Cambodia		Nepal	
	Proportion		Proportion		Proportion	
Sex						
Male	51.47%	(0.014)	40.84%	(0.011)	53.77%	(0.014)
Female	48.53%	(0.014)	59.16%	(0.011)	46.23%	(0.014)
Residence						
Urban	26.11%	(0.011)	15.81%	(0.008)	14.27%	(0.008)
Rural	73.89%	(0.011)	84.19%	(0.008)	85.73%	(0.008)
Education attainment[a]						
Less than primary	9.06%	(0.008)	5.53%	(0.005)	19.40%	(0.011)
Primary	22.61%	(0.011)	40.63%	(0.011)	33.11%	(0.013)
Secondary	55.07%	(0.014)	47.85%	(0.011)	33.93%	(0.013)
Tertiary	13.26%	(0.009)	5.98%	(0.005)	13.56%	(0.009)
	Mean		Mean		Mean	
Age at time of survey	25.38	(0.117)	24.48	(0.095)	24.68	(0.112)
Age leaving school[a]	16.14	(0.227)	14.96	(0.157)	15.19	(0.287)

Note: Standard errors in parentheses.

[a] Descriptive statistics reported here are statuses at the time of the survey. These variables are entered into the regression models as time-varying variables whose values depend on the status at a given age.

account for the majority in all of the three samples.

4.4. Analytic strategy

First, without distinguishing the educational composition or other personal characteristics, I use non-parametric survival models to describe the timing of entry into first paid employment. I treat different types of first paid employment (i.e. self-employment, wage employment without a written contract, wage employment with a short-term contract and wage employment with a long-term contract) as competing risks, and estimate the cumulative incidence for the employment type k as

$$\hat{I}_k(t) = \sum_{j:t_j \le t} \hat{S}(t_j) \frac{d_{jk}}{n_j} \tag{1}$$

where $\hat{S}(t_j)$ is the standard Kaplan-Meier estimator of the overall survival, that is, probability of not having entered any paid employment by age t_j; d_{jk} is the number of youths entering first employment of type k at age t_j; and n_j is the total number of youths who have not yet entered any paid employment by age t_j.

Next, I use an extended Cox model to estimate the relation between education status and hazard of transition to first paid employment, controlling for background covariates. Hazard is the instantaneous rate of transition[2], or, in this context, the conditional probability of entering first employment immediately at age t given that the individual has not entered any employment up to time t. The basic form of a standard Cox proportional hazard model can be written as:

$$\lambda_i(t|\mathbf{X}) = \lambda_0(t) e^{\beta \mathbf{X}_i} \tag{2}$$

where λ_i is the hazard of transition for individual i at age t. λ_0 is the baseline hazard at age t. $\mathbf{X}_i$ is a vector of covariates including education status and controls, as described in the previous section. $\boldsymbol{\beta}$ is a vector of parameters. One advantage of the Cox model is that it allows me to easily incorporate time-varying covariates, such as education status.

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[1] I use level of education attainment instead of accumulated number of years the respondent has been in school (Yabiku and Schlabach, 2009) because years of schooling observed in developing country contexts often do not coincide with the expected grade level attained or the amount of human capital accumulated, due to high rates of grade repetition.

[2] The hazard function is formally defined as $\lambda(t) = \lim_{\Delta t \to 0} \frac{Prob\{t \le T < t + \Delta t | T \ge t\}}{\Delta t}$, where T is a random variable describing age at transition.

Another advantage is that it is a semi-parametric model that does not require specifying any function forms for the baseline hazard λ_0. One important assumption of the Cox model is the proportionality of hazards, meaning that the effects of covariates are constant over time t. To ensure that the assumption holds, I extend the standard proportional hazards model in two ways. First, I stratify the model on urban/rural residence, so that youths in each stratum have distinct baseline hazards but the same coefficient vector $\boldsymbol{\beta}$. Stratification provides the most general adjustment for the confounding variable, especially when the effect of the variable is not constant over time and cannot be modeled by a simple function of time (Therneau and Grambsch, 2000, 44). Second, if the likelihood of school-work combination increases with age (Ersado, 2005), the effect of school enrolment on delaying job entry might be reduced at an older age. To adjust for the potentially time-dependent effect of school enrolment, I include an interaction term between school enrolment status and an indicator for $t \geq 18$. In addition, to test if the relation between education and transition to work varies significantly by gender, I add interaction terms between gender and education. The same analyses are repeated for transition to first stable, long-term employment.

Finally, among those who have transitioned to a first paid employment, to investigate the relation between education status and the type of first paid employment, I estimate a multinomial logit model for an outcome variable "type of first employment" with three categories, $j = 1$ for "self-employment", $j = 2$ for "wage employment without contract" and $j = 3$ for "wage employment with contract",[3] in the following form:

$$\log\left(\frac{P_{ij}}{P_{i1}}\right) = \mathbf{B}_j \mathbf{X}_i \quad j = 2, 3 \tag{3}$$

where P_{ij} is the probability of individual i entering a first paid employment of type j given that he/she has entered a first paid employment. X_i is a vector of covariates for individual i. B_j is a parameter vector associated with first employment of type j, which measures the effect of education status (and other control covariates) on the log-odds of entering wage employment with a contract relative to entering self-employment, as well as the log-odds of entering wage employment without a contract relative to entering self-employment.

5. Results

5.1. First paid employment

5.1.1. Descriptive analysis

Fig. 1 describes the age patterns of probability of entering first employment. The different colours distinguish the type of first paid employment. In Vietnam, the overall probability of entering a first paid employment by 29 is over 90%, and the median age of transition is about 23. Among the first jobs, the majority is wage employment with a written contract, slightly higher proportion than wage employment without a contract. Probability of entering a stable, long-term employment (wage employment with a one-year contract) as a first paid employment is about 32%.

In Cambodia, while over 90% of the youths enter a first paid employment by age 29, the median age of transition is about 20, younger than Vietnam. The majority of the first jobs are wage employment without a written contract. Probability of entering a wage employment with a contract by age 29 is about 28%, and the probability of entering a stable, long-term employment is even less (about 22%).

Unlike Vietnam and Cambodia, Nepalese children and youths start transition earlier and a higher proportion of individuals in Nepal have entered a paid job before age 15. However, by age 29, only 65% of the
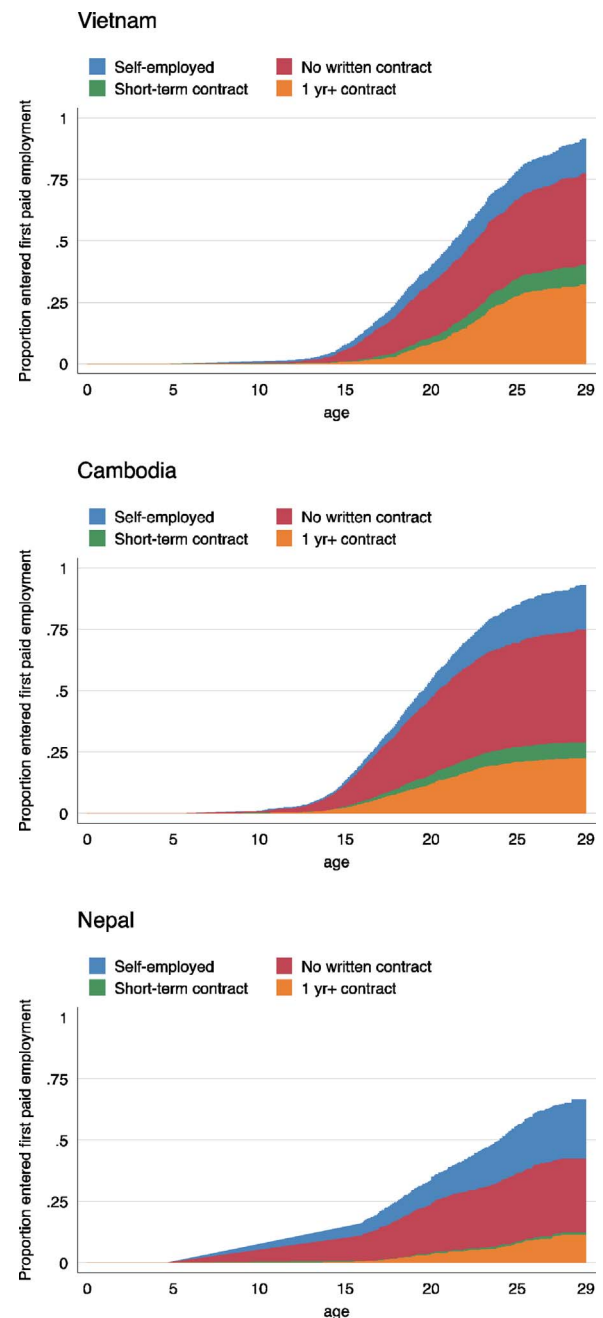

Fig. 1. Probabilities of entering first paid employment by type of employment.
Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2012 and Nepal 2012

total youths would have entered a first paid employment, in contrast to Vietnam and Cambodia where the vast majority of young people are able to enter the paid labour market. The median age of transition in Nepal is about 25, later than Vietnam and Cambodia. More youths in Nepal enter self-employment as their first paid employment (24%), compared to Vietnam (14%) and Cambodia (18%). Most first jobs are wage employment without a written contract, whereas the probability of entering a stable, long-term job as a first job is only a little over 10%.

5.1.2. Education and hazard of transition

Table 2 presents the results of the extended Cox models estimating the association between education status and hazards of entering first paid employment. Coefficients presented here are hazard ratios e^{β}. The coefficient on 'in school' compares an individual enrolled in school to

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[3] Combining wage employment with short-term contract and wage employment with long-term contract.

Table 2

Estimates of hazard ratio of entering first paid employment using stratified Cox models.
Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2014 and Nepal 2013

	Vietnam	Cambodia	Nepal
Education status			
out-of-school less than primary	1	1	1
out-of-school primary	0.97	1.35**	0.37***
	(0.146)	(0.154)	(0.077)
out-of-school secondary	1.72***	1.64***	1.1
	(0.250)	(0.193)	(0.220)
out-of-school tertiary	6.2***	5.38***	0.9
	(1.178)	(1.141)	(0.301)
in-school	0.16***	0.36***	0.95
	(0.031)	(0.046)	(0.130)
in-school $\times t \geq 18$	3.23***	1.79***	2.8***
	(0.662)	(0.242)	(0.550)
Controls			
Female	0.87	1	0.37***
	(0.062)	(0.053)	(0.034)
Age at time of survey (centred)	0.91***	0.91***	0.86***
	(0.011)	(0.008)	(0.012)

Note: Stratified on urban/rural residence.
Standard errors in parentheses.
** $p < 0.01$.
*** $p < 0.001$.

Table 3

Estimates of hazard ratio of entering first paid employment using stratified Cox models, with education and gender interactions.
Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2014 and Nepal 2013

	Vietnam	Cambodia	Nepal
out-of-school less than primary	1	1	1
out-of-school primary	1.03	1.25	0.28***
	(0.200)	(0.199)	(0.075)
out-of-school secondary	1.67**	1.5**	0.91
	(0.320)	(0.235)	(0.249)
out-of-school tertiary	5.36***	4.66***	0.28*
	(1.344)	(1.412)	(0.154)
in school	0.14***	0.29***	0.73*
	(0.032)	(0.050)	(0.110)
female	0.79	0.85	0.17***
	(0.203)	(0.168)	(0.042)
female $\times$ out-of-school primary	0.89	1.12	2.16
	(0.268)	(0.246)	(0.917)
female $\times$ out-of-school secondary	1.07	1.14	1.73
	(0.301)	(0.253)	(0.672)
female $\times$ out-of-school tertiary	1.33	1.27	11.65***
	(0.452)	(0.513)	(8.033)
female $\times$ in-school	1.39	1.38	2.65***
	(0.420)	(0.310)	(0.712)
in-school $\times \geq 18$	3.23***	1.8***	2.56***
	(0.661)	(0.245)	(0.518)
Age at time of survey (centred)	0.91***	0.91***	0.86***
	(0.011)	(0.008)	(0.012)

Note: Stratified on rural/urban residence.
Standard errors in parentheses.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

his/her contemporary who is out of school with less than primary education (the reference category). The coefficients on 'primary', 'secondary' and 'tertiary' compare an out-of-school individual with the respective education attainment level to an out-of-school individual with less than primary education (the reference category), indicating the effects of education attainment among school leavers.

In Vietnam, enrolment in school is associated with significantly lower hazard of entering paid employment before 18. Although the size of the hazard ratio associated with school enrolment is reduced after age 18, indicating that transition to work before leaving school is more common at later ages, out-of-school youths still have significantly higher hazard of transition than their peers still attending school. Among out-of-school individuals, compared to those with less than primary education, attaining primary education only does not make a difference but attaining secondary education is associated with 71% higher hazard; attaining tertiary education is associated with a six-fold increase in the hazard.

Similarly, in Cambodia, school enrolment precludes transition to paid employment: those enrolled in school have significantly lower hazard of transition than their counterparts who have left school at any given age. Among school leavers, there is a clear education gradient: compared to those with less than primary education, primary- and secondary-educated individuals have 35% and 64% higher hazards of entering first paid employment, respectively; tertiary education is associated with as much as a five-fold increase in the hazard.

A different pattern emerges in Nepal: before 18, school enrolment does not significantly reduce the hazard of transition to paid work; after 18, youths who are still enrolled in school have significantly higher hazard of transition to work than their out-of-school peers who have yet to enter the paid labour market. Among school leavers, compared to those with less than primary education, secondary and tertiary education do not make a difference in hazard of transition; those with primary education only have significantly lower hazard of transition.

A strong gendered pattern is found in Nepal, as presented in Table 3: compared to out-of-school individuals with less than primary education, tertiary education attainment increases females' hazard of transition by three-fold, but decreases males' by 63%. Moreover, compared to out-of-school boys with less than primary education, boys enrolled in school have lower hazard of transition to work; in contrast, for girls, those enrolled in school enrolment have higher hazard of transition

than those who are out of school with less than primary education. The relation between education status and hazard of transition to paid employment does not differ significantly by gender in Vietnam and Cambodia.

To illustrate the association between education and probabilities of transition and facilitate the interpretation of the hazard ratios estimates in Table 2, I calculate the predicted probabilities of transition to first paid employment for an average rural male with four hypothetical education histories (Fig. 2): 1) never been to school; 2) finishing primary education at age 11; 3) finishing upper secondary education at 18; and 4) finishing tertiary education at 22. Because there is a significant gender difference in Nepal, as shown before, I use results in Table 3 to simulate the four scenarios for both an average male and an average female.

According to Fig. 2, in Vietnam, the tertiary- and secondary-educated youths have slightly higher probabilities of entering first employment by age 29 than those with primary education or less. School enrolment has a strong influence on the timing of transition: except for a minor proportion of secondary- and tertiary students, the vast majority of the transitions to first paid employment take place after leaving school. While school attendance delays transition, upon leaving school, secondary- and tertiary-educated rural males enter paid employment at much faster rates. In contrast, for rural males with primary education or below, even though they leave school and start the transition the earliest, they transition at a much slower rate: the majority of them would not have entered a paid employment until age 20.

Cambodia exhibits a similar pattern to Vietnam: more education delays the timing of the entry into first paid employment but accelerates the rate of entry upon leaving school. While the secondary-educated start transition at a later age, by age 29, they have a similar probability of entering a paid employment as their counterparts with primary education. Compared to Vietnam, there is a higher probability for average Cambodian males to enter paid employment while in school: almost a quarter of secondary school graduates would have
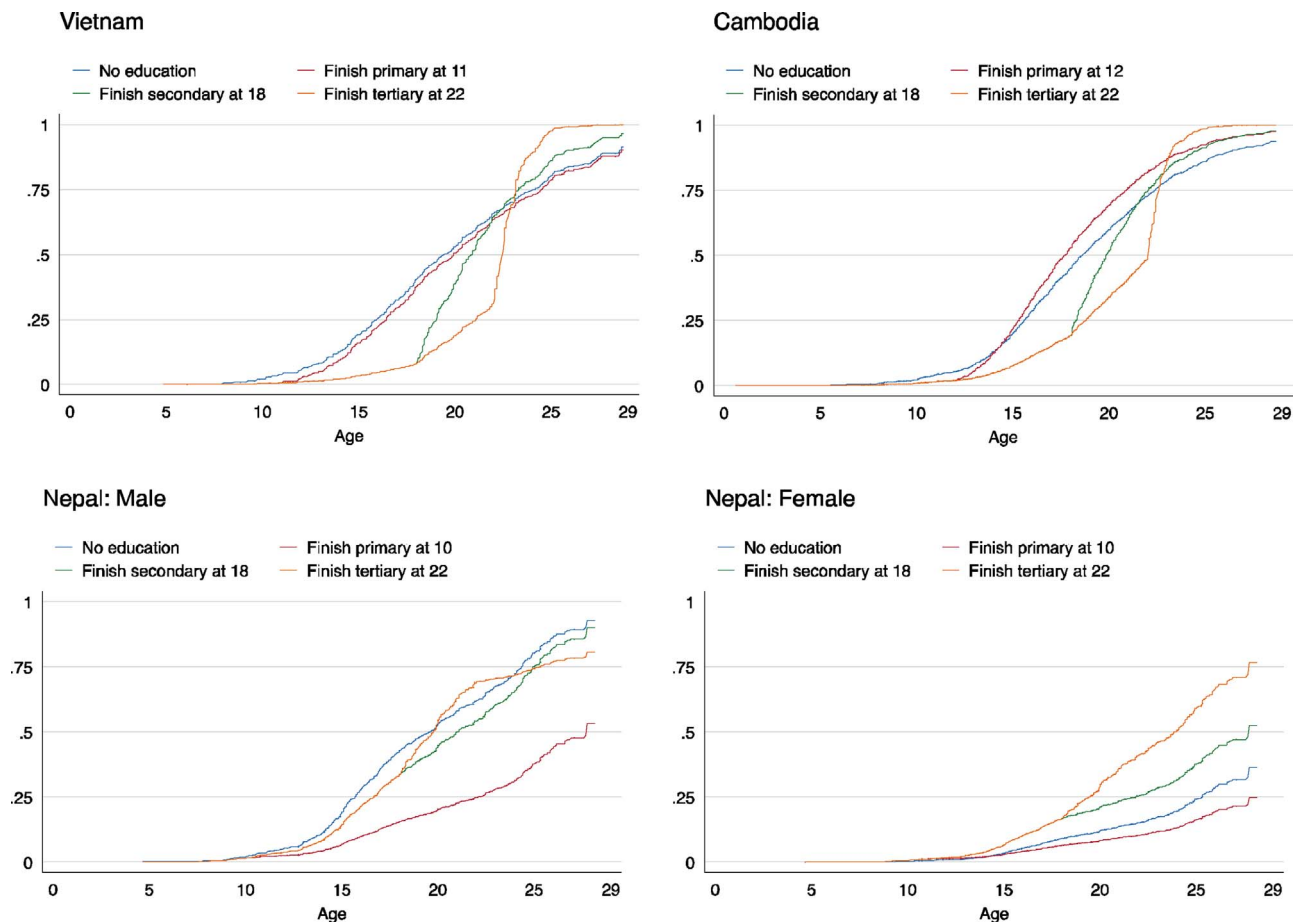
Fig. 2. Predicted probability of entering first paid employment for an average rural male in Vietnam, Cambodia and Nepal and for an average female in Nepal.
Source: Tables 2 and 3

entered a first paid job before finishing secondary school at 18, and half of the tertiary graduates would have entered employment before finishing school at 22.

Unlike Vietnam and Cambodia, school attendance does not seem to delay the entry into first paid employment for an average rural Nepalese male. Particularly, youths with no education transition as fast as those with secondary education. In contrast, rural males who have left school with only primary education attainment are least likely to enter paid employment at any age: even at age 29, probability of entering a first paid employment is only a little over fifty per cent. The disadvantage among primary-educated children in Nepal might reflect the poor quality of education (Dundar et al., 2014; Shiva et al., 2010), and the selection process associated with the different determinants underlying household decisions to send children to work, to school, or let them remain idle (Bacolod and Ranjan, 2008; Ersado, 2005; Fafchamps and Wahba, 2006; Ray, 2002). For example, if low-ability children were both less likely to progress onto secondary level schooling and less likely to enter paid employment, one would observe an association between primary education and lower rates of transition to work. In addition, for those who have completed tertiary education, while they transition at a faster rate while in school, upon graduation, the rate of transition slows down, and by age 29, they have lower probability of having entered a first paid employment than those with no education or secondary education only, suggesting evidence of "educated unemployment". Similar to males, for Nepalese females, school enrolment does not delay the timing of transition to work. However, there is a clearer education gradient among females than males: compared to females with primary education or less, having secondary and tertiary education is associated with both faster

transition and higher probability of entering a first job by age 29. In fact, the difference in probabilities of having entered a first paid job by 29 is almost 50 percentage points between tertiary-educated girls and primary-educated girls.

5.1.3. Education and type of first paid employment

Even with the same probability of transition, the type of first paid employment might still vary by education status. Appendix A Table A2 presents the estimates of the association between education status and type of first paid employment (self-employment, wage employment with contract, wage employment without contract) using multinomial logit models. To facilitate interpretation, I use the estimates to calculate the average adjusted predictions by simulating different education status while keeping the other covariates at their observed values, and computing the population-average probability of entering each type of employment. The average adjusted predictions of probability of transition are illustrated in Fig. 3. The difference in average adjusted predictions between any two statuses gives the average marginal effect.

In Vietnam, secondary and tertiary education attainment reduces the probability of entering self-employment or wage employment without a contract as a first job but increases the probability of entering wage employment with a contract. Compared to school-leavers with primary education or less, transitioning while in school actually increases the probability of landing a wage employment with a contract rather than without a contract. This is consistent with the previous findings that the few individuals who transition during school in Vietnam are mainly secondary and tertiary students.

In Cambodia, there is a strong and positive education gradient in probabilities of entering wage employment with a contract and,
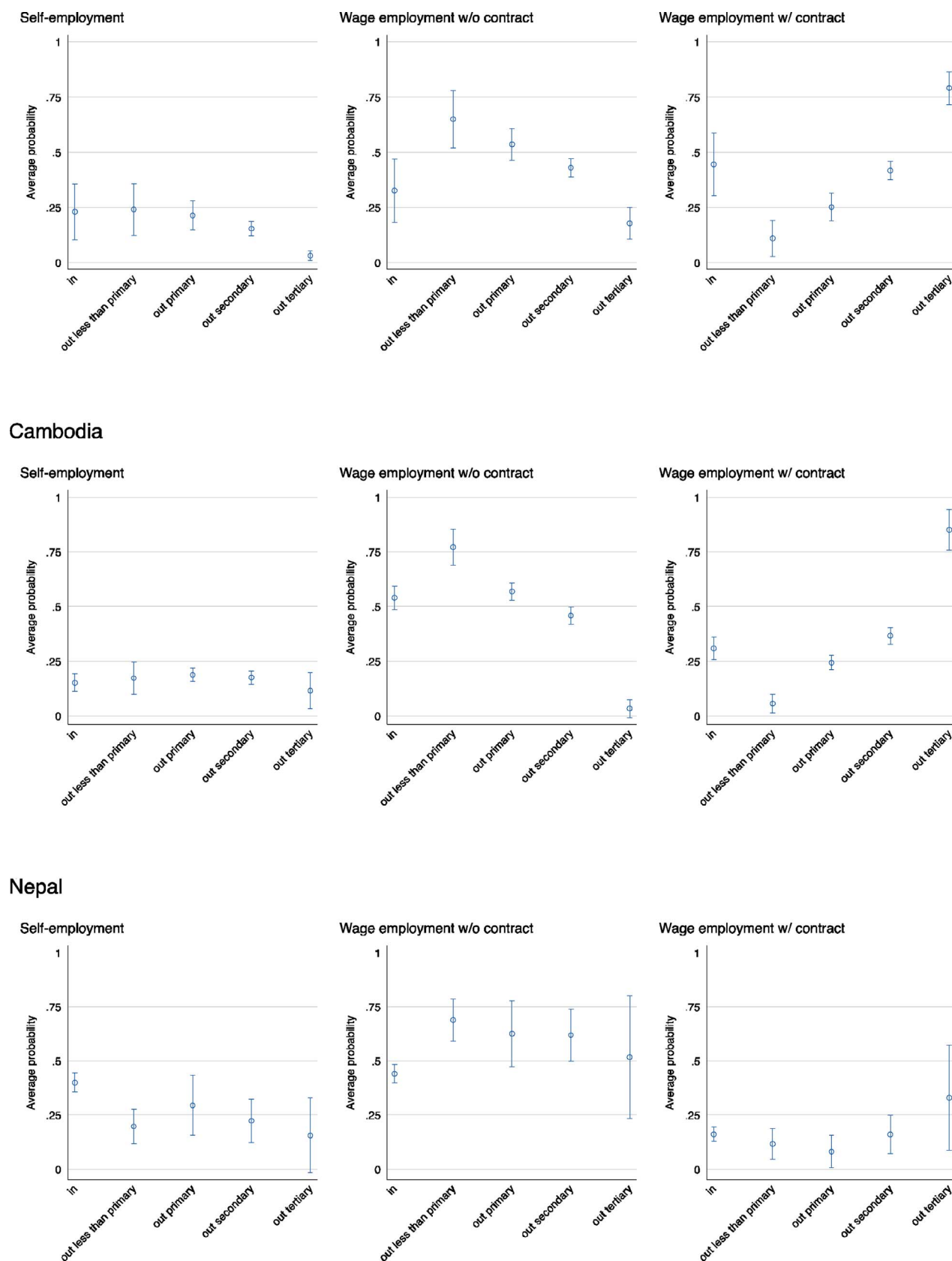
Fig. 3. Average adjusted predicted probabilities of transition, by type of first paid employment.
Source: Appendix A Table A2

correspondingly, a negative education gradient in probabilities of entering wage employment without a contract, suggesting that higher education attainment channels young people from the less stable to more stable wage employment as first jobs. Compared to transitioning after completing secondary or tertiary education, entering work while in school increases the probability of landing a wage employment without a contract rather than one with a contract. Education attainment does not make much difference in probabilities of entering self-employment as a first job.

In Nepal, compared to transition after leaving school with primary education or less, transition during school increases the likelihood of entering self-employment but reduces the likelihood of entering a wage employment without a contract. There is evidence that secondary and tertiary education increases the probability of entering wage employment with a contract and decreases the probability of entering self-employment or wage employment without a contract as first employment, but the small number of cases limits the precision of the estimates.

5.2. First stable long-term employment

Fig. 4 plots the age patterns of transition by two distinct definitions of 'first employment'. Not surprisingly, in all three countries, probability of transition to a stable, long-term employment by age 29 is much lower than that of transition to any paid employment. In Vietnam and Cambodia, while over 91% of individuals are able to transition to a paid employment, probabilities of transition to a stable, long-term employment by age 29 are 45% and 30%, respectively. The likelihood of entering a stable, long-term employment is even lower in Nepal (14.5%).

Table 4 summarizes the estimates of the relation between education and hazard of transition to first stable, long-term employment. In all three countries, out-of-school children with less than primary education do not have a greater chance of entering stable long-term employment than their counterparts who are still in school. In fact, after 18, those who continue to attend school have significantly higher hazard of entering a stable, long-term employment than their out-of-school contemporaries with less than primary education. A strong and positive education gradient is found in Vietnam and Cambodia. In Vietnam, compared to out-of-school youths with less than primary education, primary education is associated with triple the hazard, secondary education is associated with an eight-fold increase in hazard, and tertiary education is associated with as much as 53 times the hazard of entering a stable, long-term job. In Cambodia, the size of the effect is even greater, with tertiary education associated with 77 times the hazard of entering a first stable, long-term job. In Nepal, tertiary education, associated with a six-fold increase in hazard, is the key determinant of transition to stable, long-term employment.

The association between education status and transition to first stable, long-term employment does not differ significantly by gender in Vietnam and Cambodia (Table 5). In Nepal, out-of-school boys with less than primary education have higher hazard of entering first long-term employment than their peers still attending school before 18; in contrast, out-of-school girls with less than primary education have lower hazard of entering first stable long-term employment than their peers still attending school before 18. Neither difference is statistically significant, likely due to the small number of cases who had entered long-term employment with less than primary education, which limits the statistical power. Among school leavers, while girls with secondary education have significantly higher hazard of transition than their peers with less than primary education, boys with secondary education have similar hazard of transition as their peers with less than primary education.

Fig. 5 plots the transition probabilities calculated from the estimates of hazard ratios. A clear education gradient is shown for an average Vietnamese male: higher education attainment is associated with faster
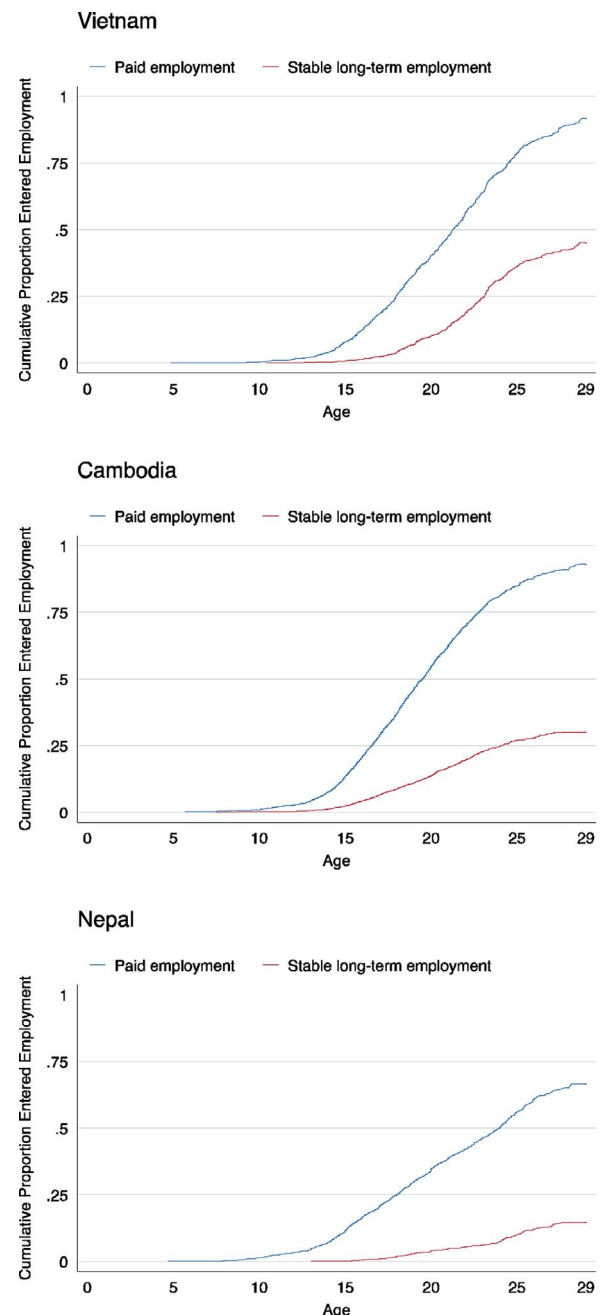

Fig. 4. Probabilities of entering first paid employment versus first stable, long-term employment.
Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2012 and Nepal 2012

transition and higher probability of entering a stable, long-term employment. Particularly, the vast majority of the tertiary-educated would have entered a long-term job by age 29, compared to a little less than half among those with secondary education and about a quarter among those with primary education. In Cambodia, an average rural male with less than primary education has little chance of entering a long-term job by age 29; attaining primary or secondary education would increase that probability by about 25%, whereas tertiary-educated rural males have 75% chance of entering a long-term employment by age 29. In Nepal, tertiary education is the key determinant of entering long-term employment for both males and females. Nepalese males with no education still have some chance of entering a long-term employment by age 29, but there is barely any chance for females with less than

Table 4

Estimates of hazard ratio of entering first stable long-term employment using stratified Cox models.

Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2012 and Nepal 2012

	Vietnam	Cambodia	Nepal
Education status			
out-of-school less than primary	1	1	1
out-of-school primary	3.37[*]	4.76[***]	0.54
	(1.758)	(2.013)	(0.283)
out-of-school secondary	8.06[***]	8.41[***]	1.46
	(4.106)	(3.555)	(0.638)
out-of-school tertiary	52.63[***]	77.38[***]	5.98[***]
	(27.476)	(36.550)	(2.578)
in-school	0.92	1.6	1.17
	(0.540)	(0.711)	(0.668)
in-school $\times$ $t \geq 18$	3.88[***]	5.04[***]	7.19[***]
	(1.546)	(1.322)	(3.574)
Controls			
Female	1.2	1.97[***]	0.54[**]
	(0.130)	(0.210)	(0.115)
Age at time of survey (centred)	0.9[***]	0.92[***]	0.95
	(0.021)	(0.017)	(0.038)

Note: stratified on rural/urban residence.

Standard errors in parentheses.

[*] $p < 0.05$.

[**] $p < 0.01$.

[***] $p < 0.001$.

Table 5

Estimates of hazard ratio of entering first stable long-term employment using stratified Cox models, with education and gender interactions.

Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2014 and Nepal 2013

	Vietnam	Cambodia	Nepal
out-of-school less than primary	1	1	1
out-of-school primary	5.73[*]	3.84	0.4
	(4.335)	(3.945)	(0.232)
out-of-school secondary	13.42[***]	12.59[*]	0.75
	(9.890)	(12.772)	(0.397)
out-of-school tertiary	111.56[***]	149.19[***]	3.48[**]
	(84.252)	(156.318)	(1.639)
in school	1.69	1.93	0.71
	(1.339)	(1.971)	(0.430)
female	3.26	2.73	0.06[**]
	(3.142)	(3.001)	(0.064)
female $\times$ out-of-school primary	0.4	1.3	4.02
	(0.401)	(1.468)	(5.470)
female $\times$ out-of-school secondary	0.41	0.58	13.91[*]
	(0.400)	(0.647)	(16.875)
female $\times$ out-of-school tertiary	0.27	0.37	10.66
	(0.274)	(0.431)	(12.928)
female $\times$ in-school	0.34	0.8	10.42[*]
	(0.342)	(0.903)	(11.549)
in-school $\times$ ≥ 18	3.87[***]	5.02[***]	6.96[***]
	(1.539)	(1.306)	(3.484)
Age at time of survey (centred)	0.89[***]	0.92[***]	0.95
	(0.020)	(0.017)	(0.038)

Note: Stratified on urban/rural residence.

Standard errors in parentheses.

[*] $p < 0.05$.

[**] $p < 0.01$.

[***] $p < 0.001$.

primary education. Even among the tertiary-educated Nepalese males, there is only about 30% probability of entering a long-term job by age 29.

6. Discussion and conclusions

In this study, I investigated how school enrolment and education

attainment among school leavers shape the timing of transition to work using the cases of Vietnam, Cambodia and Nepal. In the first part of the analysis, I examined the rate and probability of transition to first paid employment. Aside from timing of the transition, I also investigated the association between education status and type of first employment. In the second part of the analysis, I focussed on transition to stable, long-term employment, a more stringent definition of 'first employment' that excludes informal, irregular jobs, and investigated the relation between education and timing of the transition.

The study has generated several key findings. First, while very few children and youths enter first paid employment before leaving school in Vietnam, school attendance does not preclude transition to paid employment in Nepal, even among young children. In Cambodia, while most transitions to work take place among school leavers, a sizeable proportion of secondary and tertiary students enter paid employment before leaving school. The findings in Nepal and Cambodia echoes the high prevalence of school-work combination documented in various developing contexts by previous studies (Edmonds and Pavcnik, 2005; Fafchamps and Wahba, 2006; Khan and Lyon, 2015; National Research Council and Institute of Medicine, 2005; Understanding Children's Work (UCW) Programme, 2015). Compared to Vietnam and Cambodia, the more varied sequence between school-leaving and job entry in Nepal in part reflects the relatively poor school access and qualities, characterized by low attendance rate and high student absenteeism plaguing the education system (Shiva et al., 2010; Dundar et al., 2014).

While school attendance delays the transition to employment in Vietnam and Cambodia, upon leaving school, secondary and tertiary education attainment accelerates the rate of transition. Meanwhile, children with primary education or less start entering paid employment at a younger age but transition at a slower rate. Similar findings on educational inequalities and disparate rates of transition to work have been generated by studies in other countries (Utomo et al., 2014; Calvès et al., 2013; Lam et al., 2007). The relation between education attainment and rate of transition to paid employment is more mixed in Nepal. On average, secondary- and tertiary-education do not make a difference in the rate of transition to work among school leavers, reflecting the limited demand for education and skills in the labour market (Nayar et al., 2011; Islam, 2014). School leavers with primary education are particularly disadvantaged in Nepal, even compared to those who have never attended school. In the context of a static labour market, this might suggest that education expansion at primary level has exceeded the rate of job creation and the greater supply of primary-educated workers has reduced the value of the primary school credential and exerted downward pressure on the labour market returns to primary education (Colclough et al., 2010; Hannum and Buchmann, 2005). The poor quality of basic education might also have contributed to the poor early labour market outcome among the primary-educated in Nepal (Dundar et al., 2014; Shiva et al., 2010).

A gendered association between education attainment and rate of transition to work is found in Nepal. Among males, having less than primary education does not pose a disadvantage, whereas the rate of transition is slower for school leavers with tertiary education, suggesting again the lack of demand for education and skills in the labour market relative to supply. In comparison, for Nepalese girls, secondary and tertiary education is associated with higher rates and probability of transition to first paid employment; those with primary education or less are more disadvantaged. Previous research using data from Chitwan Valley, Nepal, has generated similar findings and suggested that the more pronounced education influence on girls' transition to work might be due to the higher degree of selectivity into higher levels of education attainment among girls than among boys (Yabiku and Schlabach, 2009).

In all three countries, the majority of the first paid jobs are self-employment or wage employment without a written contract. Education attainment is associated with the type of first jobs. Among those who have entered a paid employment by age 29, secondary and
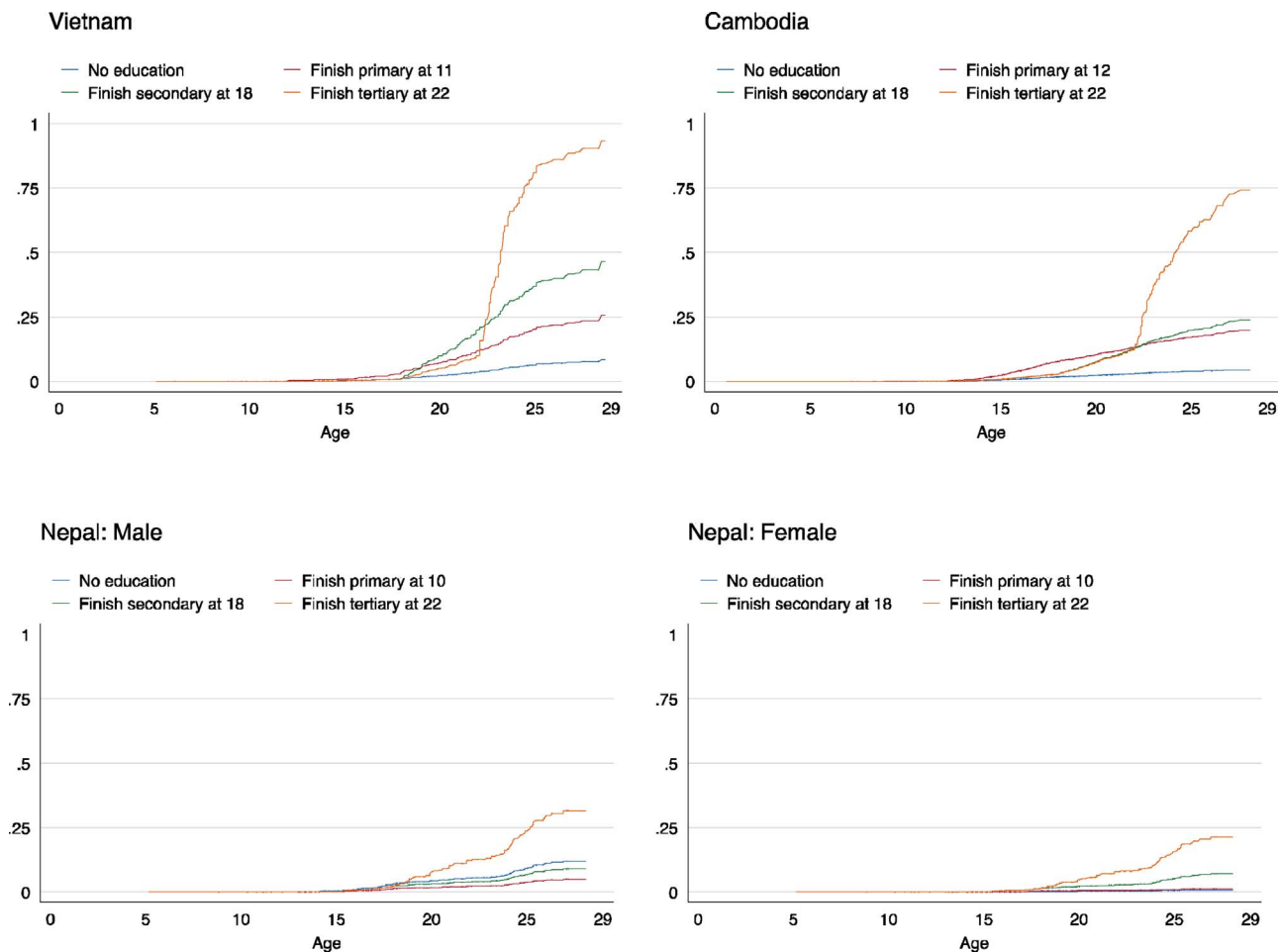
Fig. 5. Predicted probability of entering first stable, long-term employment for an average rural male in Vietnam, Cambodia and Nepal and for an average female in Nepal.
Source: Tables 4 and 5

tertiary education attainment increases the likelihood of entering a wage employment with a written contract. To the extent that wage employment with a written contract represents a less vulnerable job, this suggests that education attainment is associated with better quality of transition to paid work. Furthermore, when I apply a more stringent definition of 'first job', which excludes informal, irregular employment, an even stronger education gradient emerged in Vietnam and Cambodia: higher levels of education attainment are associated with both higher rate and higher probability of transition to stable, long-term employment. In Nepal, tertiary education attainment is a key determinant of transition to stable, long-term employment.

There are two major limitations to this study. First, the relation between education and transition to work as examined in this study is not causal: same factors that limit education attainment could also pose challenges for transition to work, such as child ability, household socio-economic status, local labour market conditions and school provisions (Bacolod and Ranjan, 2008; Ersado, 2005; Fafchamps and Wahba, 2006; Ray, 2000). Rather than making causal claims, findings of this study shed light on how the transition to work process reproduces educational inequalities. Second, this study does not distinguish vocational from general tracks within the same education levels (Müller and Gangl, 2003; Mills and Präg, 2014), nor considers non-formal education or training (Blattman et al., 2014; Brixiová et al., 2015; Card et al., 2011; Cho and Honorati, 2014; Ibarraran et al., 2014), both of which are likely to play distinct and indispensable roles in shaping children young people's transition to work.

Limitations notwithstanding, the findings have important implications. On one hand, this study extends the existing literature on

education-employment linkage by asking not only 'whether', but also 'when' children and youths enter first employment and the quality of employment. As the cases of Vietnam and Cambodia have shown, school enrolment and education attainment can affect the timing and rates of transition to employment but not necessarily the probability. Even though the vast majority of the early school leavers might be able to enter the labour market in the long run, they have higher risks of transitioning 'too early' (World Bank 2006, 96), and are likely to remain NEET for a longer period of time. This illustrates the importance of taking a life course perspective when examining labour market outcomes among children and youths in developing countries. Equally important is to differentiate types of employment. As suggested by findings from this study, even if the early school leavers with low education are able to enter the paid labour market, they are more likely to be trapped in precarious employment with limited protection compared to their peers with higher education.

On the other hand, the findings illustrate the varied sequence between school-leaving and job entry across developing contexts. The vast majority of research on transition to work in developed countries focuses on the period after school-leaving (Kerckhoff, 2000; Blossfeld et al., 2015; Müller and Gangl, 2003). As findings from Nepal have suggested, in developing contexts, the work-school combination can be both more prevalent, and occur at much earlier ages. Focusing on school leavers alone would also have left out a sizeable population of children who have never gone to school. These findings highlight the need for different assumptions and interpretations that take account of poverty in order to better understand the transition to adulthood in the developing context (Arnot et al., 2012; Juárez and Gayet, 2014).

Table A1

Estimates from logistics regression of odds of ever worked while studying (not including apprenticeship).

Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2014 and Nepal 2013.

	Vietnam	Cambodia	Nepal
Age	1.05***	0.99	1.15***
	(0.015)	(0.011)	(0.013)
Currently attending	2.14***	0.86	1.19
	(0.27)	(0.094)	(0.11)
Constant	0.06***	4.51***	0.02***
	(0.02)	(1.178)	(0.004)
N	2722	3396	3584

Note: Standard errors in parentheses.

*** $p < 0.001$.

Table A2

Multinomial logit model estimating type of first paid employment (relative to self-employment), relative risk ratio.

Source: Authors' calculation using SWTS Vietnam 2012/13, Cambodia 2014 and Nepal 2013.

	Vietnam		Cambodia		Nepal	
	contract	no contract	contract	no contract	contract	no contract
Education status						
in-school	4.36	0.49	6.46	0.76	0.69	0.28***
	(2.785)	(0.283)	(3.275)	(0.249)	(0.303)	(0.086)
out-of-school primary	2.63	0.91	4.06	0.65	0.46	0.59
	(1.474)	(0.385)	(1.969)	(0.193)	(0.321)	(0.287)
out-of-school secondary	6.21	1.01	6.64	0.55*	1.23	0.77
	(3.244)	(0.390)	(3.229)	(0.166)	(0.700)	(0.334)
out-of-school tertiary	60.51	1.99	25.11	0.06***	3.72	0.87
	(36.984)	(1.085)	(16.140)	(0.043)	(3.024)	(0.751)
Controls						
Female	1.32	0.59	1.9	0.6***	0.78	0.41***
	(0.286)	(0.126)	(0.307)	(0.087)	(0.202)	(0.084)
Age at time of survey	0.9	0.84***	0.91	0.87***	1.03	0.86***
	(0.029)	(0.026)	(0.019)	(0.016)	(0.037)	(0.022)
Rural	0.43	0.62*	0.83	0.61*	0.52	1.09
	(0.102)	(0.144)	(0.186)	(0.125)	(0.130)	(0.244)
Constant	0.79	5.84***	0.27	10.89***	1.02	4.91***
	(0.424)	(2.411)	(0.145)	(3.924)	(0.508)	(1.789)

Note: Standard errors in parentheses.

* $p < 0.05$.

*** $p < 0.001$.

Appendix A

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