The impact of low-skilled labor migration boom on education investment in Nepal

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Motivation

- Important to understand labor markets in developing countries
- Often, the only asset of the poor is their labor - Fields (2005)
- Also affect incentive to invest in education through returns to education
- Short-term fluctuations in labor market can have long-term consequences for development

Temporary labor migration: what is it?

- Low-skilled labor migration to resource-abundant countries in the Middle East
- Short-term contracts usually lasting 2-3 years
- Employment opportunities in construction and services
- Huge earnings opportunity for low-skilled labor but very little rewards for additional formal education
- Most likely a temporary phenomenon

Boom in temporary labor migration

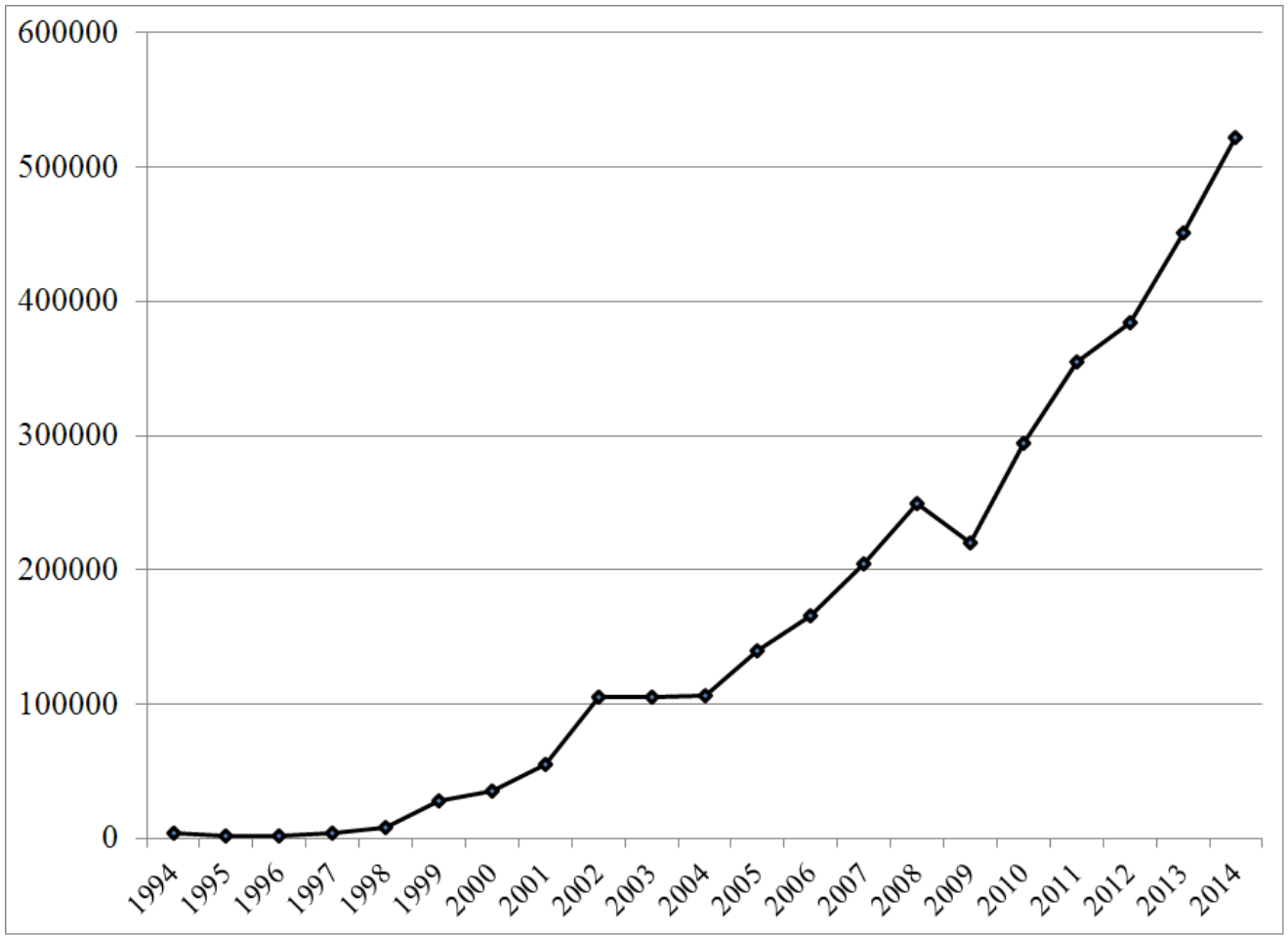


Figure: Number of applications received by the Department of Foreign Employment, 1994-2014

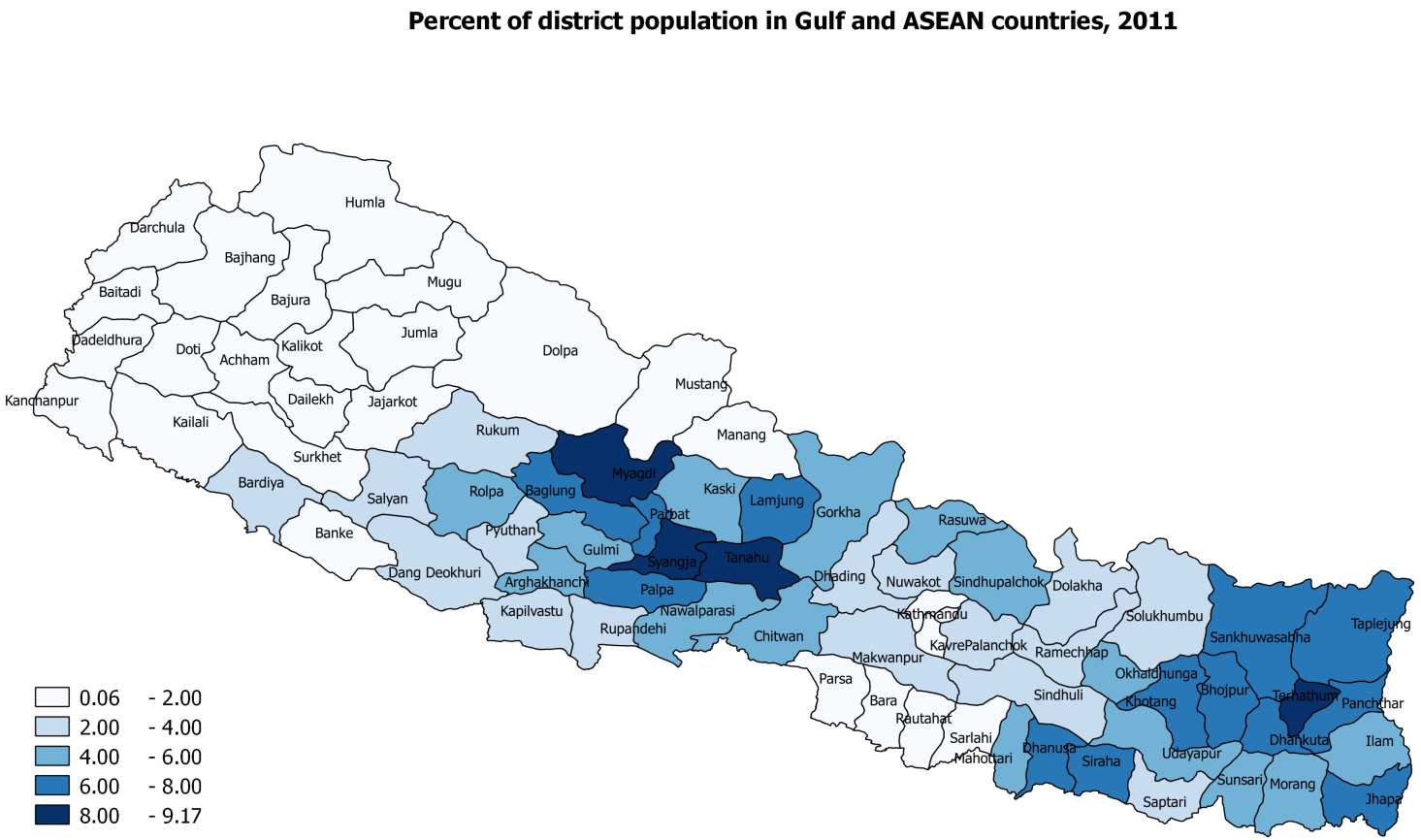
Empirical research design

- Study the relationship between educational attainment and exposure to migration boom
- Data on males aged 18-27 from Census 2011
  - Includes information on current migrant's education
- Dependent variable: indicator for attainment of SLC exam or above
- Measure of migration exposure: fraction of household in the village with temporary labor migrants

Identification strategy

- Spatial variation in exposure to migration boom
- Migration exposure instrumented by presence of early migration castes in the village's neighborhood

Spatial variation in migration rates



Background on early migrant castes

- Nepal comprises of over 100 ethnic groups - castes
- Early migrants - members of Gurung, Tamang, Rai, Limbu, and Magar castes
- Historically recruited as soldiers in the Gurkha regiments of the British army
- First group of individuals to migrate to the Gulf
- Returnees involved in recruitment in surrounding villages

Migration rates in 2001 and 2011 by caste

Table: Migration rates in 2001 by caste

Caste	% TLM household	Total HH
Muslim	3.384	15604
Gurkha	3.484	93553
Others	1.274	397926

Source: Computed from 2001 Census micro-sample

Table: Migration rates in 2011 by caste

Caste	% TLM household	Total HH
Muslim	23.622	28300
Gurkha	21.604	162855
Others	12.419	650412

Source: Computed from 2011 Census micro-sample

Construction of the instrument

- Proportion of early migrant population in a regions "neighborhood" explains migration boom
- Instrument is weighted average of population in neighboring villages
- Weights given by inverse of Euclidean distance between villages
- Control for own-village caste composition
- Exclude individuals from the Gurkha caste group in the sample

Main results

- Migration exposure had a negative impact on likelihood of continuing beyond SLC examinations
- The estimated impact is 3.6% for males aged 18-22 and 6% of males aged 23-27.
- The result is driven by districts which had a higher rate of SLC education in 1991

Table: Summary statistics: Individual and household variables

	Age 18-22 N=148476		Age 23-27 N=128821	
	Mean	Std. Dev.	Mean	Std. Dev.
Above SLC	0.127	0.333	0.147	0.355
Age	19.92	1.474	24.977	1.34
Caste				
Chhetri	0.165	0.371	0.161	0.368
Brahman	0.102	0.303	0.112	0.315
Tharu	0.071	0.256	0.068	0.252
Newar	0.03	0.17	0.031	0.174
Gurkha	0.208	0.406	0.21	0.407
Muslim	0.045	0.208	0.043	0.203
Yadav	0.042	0.201	0.042	0.2
Household education				
None[a]	0.132	0.339	0.213	0.41
Low	0.518	0.5	0.484	0.5
Medium	0.23	0.421	0.201	0.401
High	0.12	0.325	0.102	0.303

Source: Computed from Nepal Census 2011 micro-data

[a] Household education is based on maximum education of those 40 years and older. Households classified as "none" do not have any members older than 40.

Table: OLS results, full sample

	Males		Females	
	Age 18-22 (1)	Age 23-27 (2)	Age 18-22 (3)	Age 23-27 (4)
Migration rate	-0.00118***	-0.00252***	-0.00109***	-0.00133***
	(0.000211)	(0.000376)	(0.000219)	(0.000322)
Household education				
Low	-0.0323***	-0.00198	-0.000302	0.0170***
	(0.00354)	(0.00302)	(0.00282)	(0.00216)
Medium	0.0187***	0.0687***	0.0433***	0.0781***
	(0.00401)	(0.00418)	(0.00351)	(0.00354)
High	0.186***	0.270***	0.183***	0.235***
	(0.00555)	(0.00570)	(0.00496)	(0.00593)
Baseline econonmic characteristics of village				
Distance to urban	-0.00966***	-0.00209	-0.00948***	-0.00380
	(0.00264)	(0.00310)	(0.00262)	(0.00253)
Average education 15-17 yo	0.00504***	0.00957***	0.00617***	0.00676***
	(0.00118)	(0.00132)	(0.00102)	(0.00107)
Domestic migrants	0.000859***	0.00105***	0.00118***	0.00117***
	(0.000171)	(0.000198)	(0.000153)	(0.000185)
Skilled occupation	0.00272***	0.00438***	0.00235***	0.00337***
	(0.000322)	(0.000434)	(0.000339)	(0.000311)
Observations	117,548	101,780	116,057	101,073
R-squared	0.156	0.187	0.172	0.191

Robust standard errors clustered at village level in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Table shows Ordinary Least Squares regression of above SLC education on village migration rate. Other control variables not reported include: age, age-squared, individual caste dummies (Chhetri, Brahman, Tharu, Newar, Muslim, Yadav), village proportions of castes and district dummies.

Table: First stage OLS regression explaining migration rate in 2011

Dep. var. TLM rate	Males		Females	
	Age 18-22	Age 23-27	Age 18-22	Age 23-27
Percent Gurkha in neighborhood	0.0742***	0.0505***	0.0703***	0.0481***
	(0.0210)	(0.0130)	(0.0218)	(0.0132)
Percent Gurkha in village	0.113***	0.0722***	0.115***	0.0729***
	(0.0384)	(0.0263)	(0.0372)	(0.0265)
Avg. education of 15-17 yo	0.633***	0.379***	0.626***	0.377***
	(0.145)	(0.114)	(0.149)	(0.103)
Domestic in-migration	0.0445**	0.0302**	0.0408**	0.0296***
	(0.0172)	(0.0121)	(0.0187)	(0.0112)
Skilled occupation	-0.146***	-0.0825***	-0.136***	-0.0805***
	(0.0265)	(0.0167)	(0.0259)	(0.0160)
Distance to urban	-0.948**	-0.655**	-0.775*	-0.600**
	(0.433)	(0.302)	(0.421)	(0.264)
Observations	117,548	101,780	116,057	101,073
R-squared	0.677	0.638	0.681	0.640
F-stat 1st stage	12.54	14.99	10.38	13.21

Standard errors in parentheses clustered at district level. *** p<0.01, ** p<0.05, * p<0.1.
TLM rate for cohorts is computed as a weighted average of 2001 and 2011 TLM rates, with 30% and 70% weights placed on the 2011 TLM rate for cohorts 18-22 and 23-27 respectively. All explanatory variables are measured in 2001. Regression also controls for proportion of Muslim, Yadav, Tharu, Newar, Chhetri, and Brahman, as well as 75 district dummies.

Table: IV results, full sample

	Males		Females	
	Age 18-22 (1)	Age 23-27 (2)	Age 18-22 (3)	Age 23-27 (4)
Migration rate	-0.00518**	-0.0101**	-0.00306	-0.00573
	(0.00241)	(0.00422)	(0.00262)	(0.00378)
Household education				
Low	-0.0316***	-0.000190	0.000507	0.0182***
	(0.00354)	(0.00318)	(0.00285)	(0.00232)
Medium	0.0196***	0.0711***	0.0442***	0.0795***
	(0.00400)	(0.00438)	(0.00354)	(0.00361)
High	0.185***	0.271***	0.184***	0.235***
	(0.00554)	(0.00571)	(0.00493)	(0.00592)
Baseline economic characteristics of villages				
Average education 15-17 yo	0.00768***	0.0125***	0.00747***	0.00849***
	(0.00196)	(0.00221)	(0.00197)	(0.00181)
Domestic migrants	0.00104***	0.00128***	0.00126***	0.00130***
	(0.000206)	(0.000244)	(0.000196)	(0.000219)
Skilled occpuation	0.00215***	0.00377***	0.00209***	0.00303***
	(0.000449)	(0.000563)	(0.000462)	(0.000421)
Distance to urban	-0.0128***	-0.00613	-0.0107***	-0.00592*
	(0.00342)	(0.00385)	(0.00306)	(0.00305)
Observations	117,548	101,780	116,057	101,073
R-squared	0.153	0.182	0.171	0.188

Robust standard errors clustered at village level in parentheses.*** p<0.01, ** p<0.05, * p<0.1
Table shows instrumental variables regression of above SLC education on village migration rate. Other control variables not reported include: age, age-squared, individual caste dummies (Chhetri, Brahman, Tharu, Newar, Muslim, Yadav), village proportions of castes and district dummies.

Table: IV results, by districts with low and high post SLC rate in 1991

Dep. var. Post SLC education	Males 18-22		Males 23-27	
	Low	High	Low	High
	(1)	(2)	(3)	(4)
Migration rate	-0.00307	-0.00701**	-0.00420	-0.0160***
	(0.00343)	(0.00332)	(0.00689)	(0.00597)
Household education				
Low	-0.0215***	-0.0374***	-0.00613	0.00524
	(0.00520)	(0.00470)	(0.00507)	(0.00410)
Medium	0.0209***	0.0184***	0.0592***	0.0785***
	(0.00610)	(0.00528)	(0.00704)	(0.00560)
High	0.157***	0.191***	0.249***	0.279***
	(0.00985)	(0.00686)	(0.0107)	(0.00675)
Baseline economic characteristics of villages				
Domestic migrants	0.00107***	0.000949***	0.00162***	0.00126***
	(0.000336)	(0.000234)	(0.000459)	(0.000314)
Average education 15-17 yo	0.00590***	0.00872***	0.0133***	0.0127***
	(0.00201)	(0.00283)	(0.00273)	(0.00335)
Skilled Occupation	0.00259***	0.00168**	0.00529***	0.00214**
	(0.000540)	(0.000724)	(0.000716)	(0.000861)
Distance to urban	-0.00847*	-0.0182***	0.00130	-0.0190***
	(0.00472)	(0.00590)	(0.00685)	(0.00719)
Observations	42,115	75,433	34,950	66,830
R-squared	0.097	0.167	0.121	0.198
F-stat 1st stage	13.15	13.03	12.54	14.68

Robust standard errors clustered at village level in parentheses.*** p<0.01, ** p<0.05, * p<0.1
Table shows instrumental variables regression of above SLC education on village migration rate for males 18-27. The sample is divided into districts with low and high post SLC education rate in 1991. Other control variables not reported include: age, age-squared, individual caste dummies (Chhetri, Brahman, Tharu, Newar, Muslim, Yadav), village proportions of castes and district dummies.

Conclusion

- Low-skilled migration had a negative impact on post SLC education in Nepal
- At the mean, the effect is about 3.6% and 6.67% for 18-22 year olds and 23-27 year olds respectively
- Implication for schooling policy in high migration countries

Thank you!

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