

Skills Shortage: Chinese Firms and the Lao Labour Market

Introduction

Laos has sustained high economic growth averaging 7.8 percent over the last 10 years, driven by large inflows of foreign direct investment (FDI). Since Laos opened up to foreign investments in 1988, Chinese firms have invested and set up subsidiaries. China is now the biggest investor in the country, with cumulative investment between 1989 and 2014 of USD5.1 billion accounting for 33.13 percent of total FDI (Ministry of Planning and Investment 2014). Chinese firms are creating jobs and playing an important role in the country's economic structural transformation.

However, in recent years, Chinese firms began encountering problems as they shifted their focus to manufacturing and service sectors. Labour costs have remained substantially high because shortages of labour and skills constrain production improvement, creating a bottleneck for the development of many Chinese firms in Laos. The World Bank's 2012 Skills Towards Employability and Productivity (STEP) survey identified two crucial problems: labour quality and labour quantity. But it is unclear what skills are demanded by Chinese firms and lacking in the Lao labour force.

This policy brief summarises the findings of a research project conducted to identify the gap between the skills demanded by Chinese firms and those offered by the Lao labour force (Ying,

Shuhui and Deng forthcoming). Exogenous factors resulting in such mismatches are analysed and the consequences assessed through micro-level analysis of the impact on firm productivity and worker behaviour. Identifying skill shortage in Laos will contribute to the growth of Chinese firms and the skills development of Lao workers.

The research

The project focuses on the labour and skills shortages faced by Chinese firms in Laos. Because it is difficult to collect long-term data on workers' skills and abilities, studies often neglect educational attainment, skills acquisition, and learning through work (formal or informal) and life experiences and adopt education as a substitute variable for ability. Researchers attribute this to dependence on what is most easily measured, rather than what should be measured or the feasibility of doing so (OECD 2013). A separate and possibly more substantial reason that restricts the understanding of skills mismatch or shortage is that the supplier's and the demander's effects on the labour market have not been carefully considered.

The project involved a survey of Chinese firms and Lao employees. Matching questionnaires for firms and employees were designed based on the templates of the World Bank STEP survey. The firm questionnaire considers the measurement of skill composition

Table 1: Summary of the Chinese firms surveyed

	10–19 workers	20–99 workers	100+ workers	Total
Agriculture	-	1	1	2
Mining	-	1	1	2
Industry	5	15	7	27
Services	5	5	2	12
Total	10	22	11	43

Source: Project survey, 26 July to 10 August 2016

Table 2: Summary of occupational composition of interviewees

Occupation type	Project survey (Chinese firms)	
	Number	Percentage
Manager	6	2.32
Professional	33	12.74
Technician and associate professional	32	12.36
Clerical support	19	7.34
Services and sales	39	15.06
Skilled agricultural, forestry and fishery	2	0.77
Crafts and related trades	43	16.60
Plant and machine operator and assembler	24	9.27
Elementary occupations	61	23.55
Total	259	100.00

Source: Project survey, 26 July to 10 August 2016

and skill shortage to determine the stock and flow of employees in addition to obtaining basic firm-level information. The employee questionnaire deals with employee mobility and skill composition as well as employees' personal information.

The survey collected data on 43 Chinese firms and 259 Lao employees across four sectors (agriculture, mining, manufacturing and services), as shown in Table 1. It paid particular attention to production and process workers, and services and sales workers. The employee composition is shown in Table 2.

Synthesis of the survey data allows for both a direct and indirect measure of skill shortages or skill mismatch. Skill-education matching usually involves three situations: under-matched, matched and over-matched. The survey obtained data on the skills possessed by workers in the firms investigated, but data on the skill requirement of those firms is limited. Since the skill level of a specific job is similar to the same area of work, and measurements of job skill requirements have been obtained internationally, this study adopts three standards to measure the skill level of the firms surveyed:

sample criteria (by occupation), Occupational Information Network (O*NET)¹ criteria and STEP criteria (by occupation).

Skill mismatch not only affects the individual worker, but also slows firm productivity. Many studies focus on the relationship between education/skill mismatch and individual incomes (Bourdet and Persson 2008); in fact, more researchers pay attention to the negative impact of education mismatch, especially the over-educated issue. Although using education as a substitute variable for ability reflects workers' skills, formal education is not the only way for people to accumulate skills, which can be improved through work experience, training, life experience and informal learning. Thus it is

¹ The O*NET program is the nation's primary source of occupational information. Central to the project is the O*NET database, containing information on hundreds of standardised and occupation-specific descriptors. The database is continually updated by surveying a broad range of workers from each occupation. Information from this freely available database forms the heart of O*NET OnLine, the interactive application for exploring and searching occupations. The database also provides the basis for our Career Exploration Tools, a set of valuable assessment instruments for workers and students looking to find or change careers.

necessary to consider the relationships between education and income, and between skill mismatch and income.

Following Duncan and Hoffman (1981), we decompose educational attainment into three parts related to job requirements, expressed in the following equation:

$$\text{EduC} = \text{EduR} + \text{Over} - \text{Under}$$

where *EduC* represents educational attainment, *EduR* represents the educational level required by a job, *Over* means that a worker's education exceeds the educational level required by the present job, *Under* means that a worker's education is lower than the level required; it denotes a match if both *Over* and *Under* are 0. This decomposition method is introduced into an extended Mincerian wage equation, producing the ORU (overeducation-required-undereducation) equation:

$$\begin{aligned} \ln(\text{wage}_i) &= a_0 + a_1 \text{EduR}_i + a_2 \text{Over}_i + \\ &\quad a_3 \text{Under}_i + a_4 \text{Smis} + X_i b + u_i \\ &= a_0 + a_1 \text{EduC}_i + (a_2 - a_1) \text{Over}_i \\ &\quad + (a_1 - a_3) \text{Under}_i + a_4 \text{Smis} + \\ &\quad X_i b + u_i \end{aligned}$$

The project measures the skill mismatch of Lao workers in Chinese firms based on the ability level required by each occupation in O*NET, then takes the wage level, employee turnover and job satisfaction as dependent variables to observe the impact of skill mismatch on Lao workers.

Key findings

Based on analysis of the skill shortage and its effect on the labour productivity of Chinese firms in Laos, the main findings of this project are as follows:

- Lao workers make up the main manual workforce in Chinese firms. As Chinese firms develop, they are considering hiring or training middle and senior managers or professional technicians from Laos, but this needs to be speeded up and expanded.
- Chinese firms have provided a variety of employee training programs, but the effect is not so clear. High employee turnover has led to higher training costs and difficulties

in improving the overall skill level of Lao workers.

- The cognitive abilities of Lao workers, especially reading, writing and numeracy, meet firms' recruitment requirements.
- Memory and numeracy tests of Lao workers in Chinese firms show that mathematical ability is below average. It is difficult to improve cognitive ability in enterprise training.
- Noncognitive abilities, especially conscientiousness and extraversion, are the advantages of hiring Lao employees, and Chinese firms need to optimise this advantage; however, a lack of openness of character and emotional stability is a common problem for Lao workers. They are good team players, which is of great value in assembly-line production.
- Skill deficiency directly affects the income level of Lao workers. Low cognitive ability directly reduces income, and the impact of illiteracy is more prominent. Noncognitive abilities have no significant impact on income.
- Education has no significant effect on income in our sample, which is inconsistent with the classical Mincer equation. On the other hand, experience has a significant positive effect on income.

Policy implications

The educational attainment and skill acquisition of Lao workers do not meet the recruitment requirements of the Chinese firms surveyed. One important reason is that most of them did not finish compulsory education. This means that Chinese firms have to take a long view with their employee training. Compared with foreign-funded enterprises in developed countries and emerging economies, those in Laos need to make strenuous efforts to improve the cognitive and work skills of their workforce. Therefore, it would serve Chinese firms well to pinpoint the skill requirements for different occupations within their industry and implement targeted, flexible and detailed training programs.

First, a remedial action in both the short run and the long run to address skill shortage

among Lao workers is to employ a number of foreign workers with specific expertise. New foreign-funded enterprises should moderately increase the number of skilled foreign employees, particularly technicians. One-to-one on-site training is feasible for solving skill deficiency in the short term. To ensure long-term policy effectiveness, the number of foreign employees should be reduced in stages until the maximum foreign worker dependency specified in foreign investment law is reached. Coupled with “learning by doing” assisted by foreign employees, this strategy can solve skill deficiencies among Lao workers and improve their cognitive and work skills. This can solve skills shortages in the labour market in the short run and guarantee sustainable development for foreign-funded enterprises in the long run.

Second, reducing or eliminating the barriers to skill acquisition and skill upgrading among Lao workers is a must for the long-term sustainable development of Chinese firms. The Lao government, Chinese firms and local training institutions should work to discover and optimise the skills Lao workers already possess. The survey revealed that the managers of Chinese firms have not made full use of Lao workers’ skills. In some medium and small firms, efficiency was low and the management slack, lacking detailed and effective human resources management. Chinese firms need more worker-oriented management that draws on Lao workers’ initiatives.

Finally, strengthening international cooperation in skill development policies would be a win-win strategy for both Chinese and Lao firms. Although the cognitive ability of Lao workers is insufficient, they exhibit a conscientious attitude to work. The low level of cognitive abilities is mainly due to a lack of educational opportunities, so Chinese subsidiaries should cooperate with vocational schools and the human resource department in their parent firms in China to provide more on-the-job skills training and professional development opportunities.

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