

Report No. 61699- PE

PERU

Labor Skills Programmatic AAA – Final Report

Strengthening Skills and Employability in Peru

Final Report

May 23, 2011

Human Development Sector Management Unit
Andean Country Management Unit
Latin America and the Caribbean Region



Document of the World Bank

CURRENCY EQUIVALENTS

Currency Unit = Peruvian Soles (S/\$)

1 US Dollar = S/\$2.73

1 Peso = US\$0.317

(As of May 20, 2011)

FISCAL YEAR

January 1 to December 31

ABBREVIATIONS AND ACRONYMS

AUS	Universal Health Insurance (<i>Aseguramiento Universal de Salud</i>)
CCT	Conditional Cash Transfer Program
CIES	Economic and Social Research Consortium (<i>Consortio de Investigación Económica y Social</i>)
CRED	Child Growth and Development Control (<i>Control de Crecimiento y Desarrollo</i>)
ENAHO	National Household Survey (<i>Encuesta Nacional de Hogares</i>)
ENHAB	National Skills Labor Survey (<i>Encuesta Nacional de Habilidades</i>)
GOP	Government of Peru
INEI	National Institute of Statistics (<i>Instituto Nacional de Estadística e Informática</i>)
Juntos	Conditional Cash Transfer Program Operating in Poor Rural Areas
LAC	Latin American and Caribbean Region
MEF	Ministry of Economy and Finance (<i>Ministerio de Economía y Finanzas</i>)
PEAS	Basic Health Insurance Plan (<i>Plan Esencial de Aseguramiento en Salud</i>)
PpR	Results Based Budgeting (<i>Presupuesto por Resultados</i>)
SIS	Integrated Health Insurance (<i>Seguro Integral de Salud</i>)

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Acknowledgements

This report presents the final results and conclusions of a two-year program in Peru. The report was prepared by Omar Arias (LCSHD, overall Task Team Leader), drawing on the work developed by a team comprised of:

World Bank staff: Dena Reingold (former LCSHS, co-task manager of the 1st phase and Skills Survey development), Wendy Cunningham (LCSHN, Conceptual Framework and Skills Survey development and analysis), Pablo Acosta (LCSHS, labor trends and employer demand analysis), David Vera-Tudela (LCSHE, Skills Survey analysis), Maria Laura Sanchez Puerta (LCSHN, International Experience with Active Labor Market Policies), and the excellent support of Sara Burga (LCSHD).

Peruvian consultants/researchers: Juan Francisco Castro (tertiary education background paper), Mary Claux (Personality Tests development and Socio-emotional Skills background paper), CIES (Supervision of Qualitative study of employer demand and training assessments background report), CUANTO (Skills Survey sampling design and data collection), GRADE (Santiago Cueto, Andrea Baertl, Ismael Muñoz, Cognitive Tests development and Cognitive Skills background paper), Juan Chacaltana (Active Labor Market Policies in Peru background paper), Juan José Diaz (Skills Survey instrument development and Returns to Skills and Education background paper), Maria Isabel La Rosa (Personality Tests development and Socio-emotional Skills background paper), Teodoro Sanz and SASE team (Qualitative study of employer demand and training assessments background report), Gustavo Yamada (labor market trends and tertiary education background papers), with skillful research assistance from Roberto Asmat and Fernando Mendo.

The team would like to thank the Government of Peru for the collaboration in the development of this report with stimulating discussions and suggestions and for granting access to various data. The team benefitted and is thankful for the collaboration of Angela Duckworth (Assistant Professor of Psychology, University of Pennsylvania) and Lewis R. Goldberg (Professor emeritus of Psychology at the University of Oregon) during the skills survey development. The latter survey was partially financed by a DECRG Research Grant.

The World Bank team worked under the supervision and guidance of Helena Ribe (Sector Manager, LCSHS) and Carlos Felipe Jaramillo (former Country Director, LCC6).

The peer reviewers were: Cristian Aedo (Senior Economist, LCSHE), Nancy Guerra (Professor of Psychology, University of California River Side), Jesko Hentschel (Sector Manager, ECSHD), and David Robalino (Lead Economist, LCSHN).

PREFACE

1. This report presents the final results and conclusions of a multi-year program developed by a team comprising Bank staff and first-rate Peruvian researchers, which provides policy-relevant analysis of the constraints to labor market entry for low income workers. Expanding employment opportunities and addressing the deficits in skills of large segments of the labor force have become a central concern for policy makers, the business community, academics, and the society at large in Peru. The Bank has undertaken significant analyses of the macro and micro-constraints to sustaining strong economic growth and the links to quality job creation in Peru.¹ This work focuses on the less analyzed market and institutional failures affecting skills formation and labor market insertion in urban areas region—especially the segment which demands less skilled labor— with the aim to inform the development of evidence-based policy options for addressing these problems.

2. The study of the labor market and skills acquisition is not an empty field in Peru. Many local analysts have undertaken several studies of the education and training systems and the associated labor market returns. However, up to now data limitations have precluded detailed analyses of the constraints of low-income workers, particularly youth, to map their skills into suitable jobs, and to acquire the skills demanded by the labor market. This is, in fact, generally the case throughout Latin America and in many countries in the developing world.

3. In response to this crucial knowledge gap, in mid 2008 the Bank launched an analytical program that, for more than two years, has focused on building the data and analytical basis to fill this gap. The work followed a two phase process. The first phase involved the analysis of existing data (surveys, censuses, administrative), carrying out new qualitative data collection to inform development of policy questions and hypotheses, a review of existing public programs and policies, and a discussion of findings in two technical workshops in Lima. In the second phase, the team built on these diagnostics to carry out the design and collection of a unique labour force survey –first of its kind in Latin America— specially designed to measure cognitive and socio-emotional skills of the working-age urban population together with a very rich dataset on employment and socio-economic conditions. Despite the complexities and innovations of the survey, the data was successfully collected and analyzed. The analytical program concludes with this report that synthesizes the main findings and policy implications.

4. A primary result of the program is the development of the new data basis for policy-relevant analysis of the constraints to labor market entry for low income workers, related to skill mismatches (including knowledge and capacity to acquire market-relevant skills), the information on available jobs, search techniques, and the ability to signal competencies and credentials. A key aspect of the program was to draw on the extensive local expertise and analytical capacities, combined with international expertise, in the development of the new survey and the subsequent data analysis. The joint analysis of these data with Peruvian researchers, reflected in the various background papers accompanying the report, provides *prima facie* evidence on the importance of these issues in Peru and the developing countries context.

¹ See, for instance, the Country Economic and Climate Survey Assessments, the Informality and Labor Market Studies.

This rich data set is being made publicly available so that it can be further analyzed by Peruvian and international researchers to further examine these issues.

5. The work has already had a broader impact beyond the country-specific analysis in Peru. The survey instrument has become a basis for similar ongoing work in other countries of the world under a Bank global project. The findings of the analyses have been presented in several seminars/workshops at the Bank and this way influenced an evolving policy and research program on Securing Jobs for low income populations.

6. The ultimate goal of the World Bank with this analytical program is to inform the development of policy options that are technically sound and to contribute to an open and fact-based public debate around Peru's policy priorities to improve employability and skills formation. In this vein, besides the wide dissemination of this report, the main findings of the work are also the basis for one of the three core Policy Notes (focused on Skills Development) the Bank has prepared for the transition to a new administration of the Government in Peru. Moreover, the Bank's team has developed audio-visual material to communicate the findings and policy messages of the report in a didactic and engaging way. The target audience is policy makers in the Ministries of Economy and Finance, Labor, Education, and Health, and in relevant social programs, as well as the broad research community and civil society in Peru preoccupied with these issues. It is hoped that this effort and the report can contribute to inform the discussions of the future of social and employment policy among policy makers and the Peruvian society at large.

EXECUTIVE SUMMARY

The strong economic growth of Peru over the last few years has improved employment conditions. However, employment creation has been insufficient and uneven and earnings and labor productivity rose modestly. Some segments of the labor force continue to experience difficulties tapping on new employment opportunities.

This study examines the extent to which two sets of barriers to employment hinder the insertion of low-income urban workers into the labor market: lack of valued skills (workers lack the skills employers most value) and labor market mismatches (problems linking workers –skills- to existing jobs). In doing so, it documents the skills employers want, the earnings returns (premium) of generic, technical and professional skills, the socio-economic gaps in skills formation, and the means workers used to search for jobs and demonstrate their skills to employers. The analyses, conducted by a Bank team and Peruvian researchers, rely primarily on a new innovative household survey on skills and labor market developed for this study –first of its kind in Latin America— together with new qualitative data and other already existing data sources.

MAIN FINDINGS

The study provides evidence that **three factors are increasingly constraining the labor market insertion of workers**, especially from lower-income families, hindering their capacity to tap on new employment opportunities:

The first, and most binding factor, is the lack of a core set of generic (cognitive and socio-emotional) skills, which are demanded by employers and highly valued by the labor market. The ensuing skills gaps start very early in life due to inadequate nutrition and nurturing learning environments, and deficient quality of basic education (especially in rural areas) of disadvantaged families.

Both international and Peru evidence suggest that these generic skills –developed through appropriate nurturing and learning environments in families and schools – lay the foundation for a “well-educated” labor force which is well prepared for the rapidly changing labor market of the 21st century global economy.

Taking the development of these generic skills seriously in Peru’s development strategy matters for three main reasons:

(i) they matter to employability as Peruvian employers consistently manifest that these are the skills they most want but find hard to get and in turn the labor market places a high value on them. Socio-emotional skills like the ability to persevere towards long-term goals entail a life-time earnings dividend in urban Peru comparable to that of cognitive ability (i.e., intelligence);

(ii) they matter to the long-term growth of the economy. If over the next 10 years, Peru were to double the pace of performance gains achieved in its PISA scores in the past decade – which would bring Peru to the current average OECD performance (a PISA score of about 500), it could boost its *long-term* per capita growth by 2.4% per year. If it just sustained the same pace of gains, annual per capita growth would increase by 1.2%;

(iii) they matter to social mobility as there are significant gaps in these skills between Peruvians from better off and worse off families, and they correlate with educational achievement, including the pursue of a college education. Consistent with international evidence, inequalities in skills development in Peru start very early in life. Comparable data on the cognitive development (measured by receptive language) of 5 year olds show that the poorest Peruvian children start off much further behind their better-off counterparts than in India (3 times the gap), Vietnam (twice the gap), and Ethiopia (50% bigger gap).² There is evidence that experiencing malnutrition in infancy in Peru, together with family background (e.g., mother's education), is one chief determinant of this later cognitive impairment as a toddler. Cognitive skills are more important predictors of who pursues tertiary education than financial constraints, and along with the perseverance (determination) to pursue long-term goals discriminate those who opt for college from those who opt for a technical education while financial constraints plays no role. This is how the process of skills formation runs its course through the life cycle.

These generic skills are complementary rather than an alternative to technical and professional qualifications in so far they determine a person's "readiness to learn" and capacity to acquire specific professional qualifications, technical and job-specific skills over the life course. Generic, technical and professional skills –together— determine human capacities and motivation in the workplace. The international evidence suggests that technical skills training alone cannot be relied on to fill the human capital (general skills) gap and increase the employability of workers.

Both cognitive and socio-emotional skills have been shown to also positively impact other important social outcomes in OECD countries such as crime, substance abuse, teen pregnancy, and health (e.g., obesity). They are thus essential for improving the quality of life of all Peruvians, in terms of long-term income potential, better health, more engaged citizenship, and ultimately more happiness.

The second important factor is information failures in the post-secondary skills formation process, which lead many young Peruvians to sub-optimal investments. These in turn are related to deficiencies in the provision and the regulatory framework of tertiary education and training services.

The study adds further evidence to studies by Peruvian researchers showing that many young Peruvians are led to investments in technical and professional skills which do not yield adequate payoff. Although average returns to higher education are high, the returns to different types of post-secondary education vary across institutions, careers, and across workers.³ In particular, tertiary non-university education and some college careers show returns that are not very attractive, and even negative when direct costs are factored in. There is also considerable variation in the returns to training programs. The returns to firm-based training programs, and increasingly those offered by universities, are higher than those of the main technical skills formation institutions.⁴ This suggests that the latter are not equipping trainees with valued skills. Likewise the studies looking at the impact of large publicly funded technical training on

² The Young Lives project at Oxford.

³ Yamada and Castro (2010).

⁴ See Chacaltana (2010).

employment and wages find low or zero rates of return.⁵ These studies argue that training institutions have outdated curricula, divorced from market needs, and as a result their programs have low rates of return.

The generalized perception in Peru is that too often individuals invest in the "wrong" types of skills and careers. Too many go into saturated dead-end professions (e.g., pedagogy, communication) while the payoff to some technical skills and careers (e.g., engineering, technicians) are very high. In fact, the new survey evidence shows that 8 out of 10 urban college-educated Peruvians (78%) chose their careers primarily based on their "vocation", meaning individual tastes and preferences. Only 13% chose their career based on its employment outlook. Only 16% (22%) of those who studied a technical career in a public (private) institute in Lima would pick the same career and institution if they could choose again. The majority of individuals who pursued technical careers in an institute regrets some element of their choice and would rather have pursued a university education. Close to half of recent young college professionals regret their choice of either career or institution. A consequence of inadequately informed decisions of type of education, career or institution is to have persistent problems of labor market insertion after completing the degree. Twenty (twenty six) out of 100 college professional (technical career graduates) believed their post-secondary studies had no impact on their employment prospects (since they would be better off had they not studied the chosen career).

The study argues that information failures in the tertiary education and training markets – affecting families, providers, and firms— preclude career and provider choices informed by sound cost-benefit analysis. In particular, the lack of reliable signaling and quality assurance leads to significant mismatches between individual and family investments in tertiary education and the demands of the labor market.

Finally, information failures in the job matching process hinder the ability of workers to demonstrate their skills to potential employers. These are in turn related to barriers to obtain credible schooling credentials and inadequate mechanisms for skills certification and post-secondary accreditation.

Although the mechanisms to match workers to available vacancies in Peru are not well developed, this does not seem to be a main binding barrier to employment of urban workers. About half of Peruvian workers find jobs through "word of mouth" (i.e., rely on social networks of relatives, friends and acquaintances), three out of 10 contact employers directly, 15 percent use formal mechanisms, and the rest rely on self-employment or attempts to set up a business. This is consistent with data showing that employers tend to rely on informal networks and mechanisms to find suitable workers. Social networks rank as the most effective perceived method for job finding according to workers' perceptions, including those who usually recur to formal job search mechanisms. Moreover, social networks seem to lead to jobs of quality (measured by earnings and satisfaction on several job dimensions) comparable to that of formal search methods.

On the contrary, new evidence indicates that low-income workers tend to lack the means to demonstrate their skills to employers and this hinders their employment prospects. Skill credentials are quite often required by employers, especially from the more educated workers and

⁵ Saavedra and Chacaltana (2001); Yamada (2006); Chacaltana (2010).

for the better quality jobs. Nearly half of workers have had their skills credentials checked when searching for a past job. This is most prevalent among the more educated workers (19% for some secondary education or less compared to 79% for the college educated), almost the rule for formal salaried workers, and true for about half of the unemployed, one third of inactive workers and a quarter of the self-employed at the time of the survey.

The most common worker-reported requirements of credentials are certificates of study and reference checks. Consistent with employers survey data, reference checks are most important for the less educated and unskilled jobs, while workers with tertiary education are most often required to demonstrate education credentials through diplomas or certificates of study. However, three out of ten college graduates fail to obtain their bachelor's diploma while almost half of graduates from technical institutes did not get a diploma that certify their studies. This happens in roughly equal proportion either because they did not meet all academic requirements—such as courses, final examinations, thesis— or could not afford the cost of obtaining it and/or the burdensome process involved. This confirms anecdotal evidence that many workers often face serious constraints to demonstrate their formal schooling and skills already acquired due to the high monetary and non-pecuniary costs of obtaining the relevant diploma or certification.

The study shows strong evidence indicative that the lack of adequate means to effectively demonstrate their skills to employers is an important barrier to suitable employment, particularly for low-income families. The return to having a credential are positive, reaching 26 percent in the higher education educated sample. Workers with credentials are also almost twice as likely to be satisfied with their job, and 3 times more likely in the tertiary sample but only if the worker has the degree diploma (no effect for certificates, as expected). This higher satisfaction holds for almost all dimensions of employment, except for incomes in the college sample (odds 1.6 higher but statistically insignificant) and hours flexibility in both samples, while the stronger effects (odds 2 to 3) obtain on two clear dimensions of job quality: benefits and mobility prospects.

Thus, workers who face costly and bureaucratic constraints to acquire credentials for their completed secondary and post-secondary schooling are unjustifiably hindered in their ability to secure a job that best match their skills. As noted in Section 3, this is one of the dimensions which emerge weaker in workers' own assessments of their capacities to seek employment. Such constraints should be removed akin to efforts for simplifying and reducing the cost of registering a business, where Peru has made significant strides in recent years. The availability of better means to readily screen workers signals is likely to be valued also by employers.

POLICY IMPLICATIONS

These findings pose a wide set of challenges and opportunities to public policy in Peru. The main overall policy lesson is the need for a policy framework that goes beyond narrow and fragmented educational, training and labor market policies and fosters integral long term skills development strategies and improved fluency of labor markets. This spans a wide ranging, all important, policy agenda that can build on the important advances Peru has made in recent years in these areas. There are some promising reforms and interventions that can help remove the barriers of low income workers to urban labor markets.

Below are **three main strategic directions with some selective actions** more directly derived from the contributions of this study:

First, prioritize programs and policies that give low-income children a level playing field to acquire school-readiness, and support to schools for the development of basic cognitive and socio-emotional skills.

- Prioritize public resources and efforts towards the development of generic skills –cognitive and socio-emotional— through critical investments and interventions when these skills are more malleable, ensuring:
 - an adequate maternal and child health and nutrition foremost in the first 1,000 days of life since conception;
 - an enriching learning environment during ages 2-6;
 - quality basic education that develops both cognitive and socio-emotional skills through adolescence.
- Reach and maintain a social pact for boosting a sustained investment in early childhood can provide a foundation for political sustainability as has been stressed by the Pact for Investment in Early Childhood (*Inversion por la Primera Infancia*, 2010) which gathers the support of diverse segments of Peruvian society, including political actors, business, academics, opinion makers. Establish three core overall policy goals:
 - eradicate child malnutrition;
 - foster adequate early-childhood skills development in the first 5 years of children's lives;
 - solidify basic generic skills development in the basic education cycle.
- To achieve all of this, Peru could consider specific actions to:
 - improve the management and operational capacity of *Juntos*, expanding its coverage combined with an adequately expanded supply of nutrition and health services;
 - ensure access to quality basic health and nutrition services, by closing the gaps in human and other resources of health centers through performance-based financing (as with the *Programa Articulado Nutricional -PAN PAN*);
 - ensure an adequate supply of Early Childhood Development services, to cover poor children age 0-2 (from *Juntos* families), and continuing the expansion of access to pre-school (age 3-5), with adequate provisions to ensure their quality;
 - improve the quality and closing remaining access gaps in basic education, though a broader reform impetus as encompassed in the National Educational Plan (*Proyecto Educativo Nacional –PEN*);
 - provide low-income parents with information on nurturing parenting practices, through existing programs (like *Juntos*), services (counseling in health centers), and schools (through their involvement in community participation).

- ensure that pre-school and basic education curricula and pedagogic practice pays adequate attention to the critical development of socio-emotional skills, for instance, self-regulation during the pre-school years and motivation, self-esteem, and capacity to develop healthy interpersonal relationships during adolescence through adolescence.

While their importance has been long recognized by educators, socio-emotional skills have remained relatively marginal in the core reforms of educational policy in Peru. They could be attended when it comes to passing laws, setting learning targets or training teachers. The development of standards and capacities to assess learning in both cognitive and socio-emotional dimensions in culturally sensitive ways is a pending task. The experience with related reforms and interventions in the world can offer useful lessons, such as recent innovations in the U.S., U.K., Australia and Colombia.

Second, reduce the wide variation in the quality of tertiary education and support the expansion of access, to strengthen the full “value option” of skills investments and making links to innovation.

- Provide individuals and families with timely and relevant information on market returns to various career paths and on the characteristics of the supply of programs with some minimum quality assurance.
- Improve the governance and independent oversight of the sector on the basis of voluntary but incentivized accreditation, in order to achieve sustained improvements in the relevance, efficiency and quality of the tertiary education system. The primary focus can be on accelerating recent reforms in Peru to:
 - develop the regulatory and quality assurance (accreditation) framework in education through the consolidation of the SINEACE (*Sistema Nacional para la Evaluación, Acreditación y Certificación de la Calidad Educativa*) agencies for basic education, university and non-university tertiary education;
 - establish reliable mechanisms (labor market observatory and more integrated employment service) to communicate regular information about the quality and returns of higher education programs and the most demanded skills. Several countries have established labor market observatories (such as Chile and Colombia) and employment services to inform both career choice, training investments and facilitate job search, from which lessons can be drawn.
- With a more developed quality assurance function in place, additional measures that would help in this area include:
 - increasing equity in enrollment by expanding student finance (loans, scholarships) to support qualified students (with adequate generic skills) attend different types of tertiary institutions, based on needs, merits and tied to accredited institutions. Peru could benefit from lessons of innovative loan programs in the region (such as Chile’s Preferential School Subsidy, CAE, and Colombia’s ICETEX);

- fostering links between firms and universities locally and abroad with respect to R&D, knowledge sharing and research networks.

Third, address technical or job specific skills gaps of youth and adults using selective interventions, including incentives for firm training, public financing with private provision, and targeted programs.

- Move towards putting in place a training system that relies on a variety of integrated policies and mechanisms suited to a heterogeneous workforce.
- Maintaining the right incentives for firms to train their workers, making sure the now operational new law to incentivize firm training fulfill a few pre-requisite elements of success:
 - keeping an effective, simple mechanism for administering tax exemptions through the tax system since complicated rules lead to employer noncompliance;
 - ensuring training is relevant to market needs by allowing proceeds to be used for in-service training or to purchase training at an accredited (eventually by SINEACE) training institution.
 - evaluate its implementation and its operational mechanisms in order to discern the need for adjustments in its implementation over time, feeding in lessons from successful experiences such as the National Service for Industrial Labor Training (SENATI).
- Expanding the scope of the Pro-Joven youth employment program to address the gaps left out by firm training, namely, training on socio-emotional skills and coverage of less experienced and educated workers that work mostly for small employers. Specifically:
 - incorporate training components on behavioral (socio-emotional) skills, besides technical, basic cognitive or specific trades.
 - Trying out features of mentoring programs as there is evidence that youth participants develop socio-emotional skills from participation.

These and other specific actions can contribute to address the market and institutional failures affecting skills formation and labor market insertion. Sustained growth can be enhanced by improving the efficiency of skills formation and better matching of workers to suitable jobs. This also lays out a more solid basis to develop social protection programs that are compatible with strong work incentives and sustained productivity growth.

I. INTRODUCTION

1. For the last few years, Peru has experienced strong economic growth and employment creation. There is widespread consensus that a serious improvement of the human capital base of the economy is quintessential to sustain these positive trends. Although labor market outcomes have improved, there is evidence that employment creation has been insufficient and uneven and earnings and labor productivity registered only modest growth⁶. Rapid economic growth coupled with a change in the pattern of labor demand (reflecting both export-led growth and technological changes) may be leading to mismatches in the supply and demand of skills in the labor market. This will exacerbate with the increasing importance of export-led growth whether based on natural resource endowments or on newly developed higher value added activities.

2. Moreover, there has been an expansion of social expenditures sustained by the expanded fiscal capacity. Although poverty rates and inequality have declined, there is realization that the benefits of the increased prosperity have not been distributed evenly among the population⁷. Social indicators related to human capacities, while improving, continue to lag behind other countries with similar per capita income. The strengthened democracy and decentralization process have increased the political influence of the low income population. As a result, there is growing pressure to address gaps in social policy by improving employment opportunities and establishing more effective social safety nets.

3. Peruvian employers generally complain that workers do not have the necessary skills, although it is less clear *which* skills are scarce. Peru is a middle-income country, with near-universal coverage of primary education and is well above LAC regional averages in secondary and tertiary coverage. However, education quality (learning outcomes) lags behind other comparable countries in the region and worldwide. Studies show that the quality of secondary and tertiary education and labor training provided is very heterogeneous. There is a perception that the education system, both basic and post secondary, is fragmented and offers distinct paths of access and quality to develop general skills among the young population. The generalized view is that too often individuals invest in the “wrong” types of skills and careers. The popular claim is that too many go into saturated dead-end professions (law, communication, pedagogy)—and end up driving taxis—while the payoff to some technical skills and careers (e.g., engineering, technicians) are very high. There is a need to identify the market and policy failures that hinder the skills development and the employability of low-income segment of the Peruvian labor force.

4. As in most of Latin America, job search and most recruiting tend to rely on informal mechanisms that may lead to an inefficient and inequities in the job matching process. There is anecdotal evidence that Peru’s unbalanced growth pattern has resulted in disequilibria in the allocation of labor and unequal access to job opportunities. Some regions with booming local economies are experiencing important shortages of less skilled workers (e.g., construction, agricultural laborers). Also, several studies by Peruvian researchers have argued that credentials play an important role in giving access to employment opportunities. Thus, there is a need to understand to what extent the lack of efficient and equitable search methods and credible means

6. See Labor Markets World Bank Policy Note.

7. See Poverty and Social Protection World Bank Policy Notes.

to demonstrate skills to employers are further constraining the ability of low income workers to tap on new employment opportunities.

5. In addressing these issues, the report is organized as follows. Section 2 gives a brief overview of the most relevant trends and characteristics of the urban labor market in Peru to lay out the context for the study. Section 3 lays out the main questions, conceptual framework and hypotheses of the study. Section 4 documents the value placed on different skills by employers, the labor market and the economy. Section 5 characterizes mismatches between the various skills workers have and those employers want and the reasons why low-income workers, particularly youth, fail to acquire the skills demanded by the market. Section 6 describes the constraints faced by low-income workers to map whatever skills they have into suitable jobs. These draw on new policy analyses conducted by Bank staff and Peruvian academics using a variety of data sources, chiefly a new household survey on skills and labor markets in Peru, first of its kind in Latin America. The analysis is aimed to inform the development of evidence-based policy.

6. The final policy section then discusses the strategic directions, key challenges and most promising reforms and interventions to remove the barriers of low income workers to urban labor markets. It underscores the importance of an integral long-term strategy for skills development in Peru covering children's nutrition and health, basic and tertiary education, and labor training, and specific actions to address the market and institutional failures affecting skills formation and labor market insertion. The detailed diagnosis of the situation and reforms of specific programs and policy options in these areas is conducted in recent World Bank Policy Notes on nutrition/safety nets, health, basic education, tertiary education and standards and accountability for social services.

II. EMPLOYMENT OPPORTUNITIES HAVE IMPROVED BUT UNEVENLY AND WITH INSUFFICIENT QUALITY

7. Labor demand has been growing in Peru especially in recent years. Following an increase in the late 1990s to early 2000s, the overall unemployment rate and the average length of periods of unemployment are now falling across the country. The phase of “jobless growth” noted in the 2005 World Bank’s Poverty Assessment has now given way to a phase of rapid employment growth. During the 2002-08 economic boom, the labor force rose by 3.0 million workers, and employment creation grew faster so that the number of unemployed fell. Over the last 5 years alone, employment growth has been running at about 3% per year (half the growth rate of the economy), which meant the creation of 1.4 million new jobs.⁸

8. While the economic boom has impacted labor market outcomes positively, impacts fall short of expectations. Peru experienced rapid employment growth, but modest improvement in real wages and employment quality (formal salaried work). While there is a fall in unemployment and underemployment, and unregistered employment, Between 2002 and 2008 real monthly earnings rose by about 1 percent per year, falling behind labor productivity which grew twice faster.⁹

9. Peru is an underperformer in regional labor productivity comparisons among middle income economies. Despite the massive economic dynamism and employment creation, reallocations of labor from low to high productivity sectors were modest over the past decade. By 2008, 51.2 percent of all Peruvian jobs continued to take place in low-productivity sectors, including agriculture and trade, compared to 52.7 percent in 1997.

10. Job opportunities have not been distributed evenly and the quality of employment has improved notably less. By 2008, the share of informal employment was 73 percent compared to 76 percent in 1997. Many workers, particularly youth and older workers and the unskilled, continue to experience higher rates of jobless incidence and longer spells. For instance, the low unemployment duration in Peru hides significantly long periods of inactivity for many workers—about half of workers exit unemployment to inactivity rather than to employment.¹⁰ This is similar to the findings for OECD and other developing countries of the importance of re-incidence of unemployment for unemployment durations.¹¹

11. Data from a specialized survey of the Ministry of Labor covering Metropolitan Lima asks retrospective employment status which can be used to compute an alternative “annual” rate of unemployment.¹² This represents the average share of days the active population stayed unemployed during the whole year. This rate fell even more than the regular unemployment rate during the economic expansion, from 12.5% in 2002 to 6.3% in 2007. Yet younger workers (14 to 18 and 19 to 25 years old) continue to show double digit annual unemployment rates, suggesting that their unemployment re-incidence is high. An average of 13.3% of the population

8. Mintra (2010). This section is based on the recent World Bank Labor Markets Study (2010), the background papers for this report of Yamada (2009) and Chacaltana (2009), all of which provide a comprehensive characterization of labor market trends in Peru.

9. Idem.

10. See Yamada (2009) and Chacaltana (2000).

11 See Clark and Summers (1979) and Akerlof and Main (1980) for the United States and Galiani and Hopenhayn (2003) for Argentina.

12 See Yamada (2009).

over 14 years old suffered a period of unemployment within a year between the years 1999 and 2007. Workers age 19 to 25 had the highest unemployment with 23.9%, followed by the 26 to 40 group, with 13.7%, and the 14 to 18 group, with 11%. Therefore, workers up to 40 years old face significant double-digit unemployment rates in Metropolitan Lima. A striking 15.6% of the Lima population remains in chronic unemployment for the whole year. One fifth of the unemployed with up to primary education are chronically unemployed. This suggests that even in Lima these workers are having significant difficulties to tap on the numerous employment opportunities.

12. Further, the large majority of workers continue to hold informal jobs. Peru exhibits among the higher rates of informal labor in Latin America under a variety of definitions¹³, and this situation has not improved much with the recent employment growth. Informal labor is higher in urban settings—whether defined based on the size and type of firm or by the proportion of workers who lack social security coverage—and it affects youth (largely informal salaried) and older workers (notably self-employment) disproportionately.

13. Consistent with regional evidence, a large fraction of informal self-employment in Peru is a source of valued jobs, a majority of informal salaried jobs offer remuneration and working conditions inferior to those in comparable formal jobs¹⁴. Informal salaried work is a point of entry to the labor market for most of the young who find in self-employment the least viable source of employment. Detailed studies of transitions of young workers show a high degree of mobility between school, unpaid and informal work, and, to a lesser extent, unemployment which suggests significant difficulties to be tracked into regular employment.¹⁵ Self-employment is largely prevalent among workers in their prime-age and beyond. As noted by Perry et al (2007), while many workers opt to become self-employed after accumulating both human and financial capital in salaried (formal) employment, many middle-aged workers who lose their formal sector job may be unable to find a new one because their skills are rendered obsolete and of little demand in emerging sectors. These workers are more likely to find themselves without employment, searching for a new job, and lacking the broad coverage of safety nets and social insurance common in most industrialized countries.

14. Summarizing, despite the impressive economic and employment gains achieved over the last decade, the Peruvian labor market show several weaknesses. The recent World Bank labor market study concludes that tackling low labor productivity, high informality and sluggish real wage growth requires a range of policy interventions that address three distinct types of structural problems: (1) improving human capital; (2) enhancing labor market regulations, and; (3) cutting the red tape of doing business.

15. This study is concerned with the first issue and with the question of why many workers experience significant difficulties to be mapped into suitable jobs, even when the economy was doing well. There is a need to understand which policy and institutional deficiencies may be hindering the process of skills formation and job matching. The next section outlines the questions and hypotheses driving the analytical program and the evidence presented in this report.

¹³ Perry et al (2007).

¹⁴ Perry et al (2007) for LAc and World Bank (2008) for Peru.

¹⁵ Saavedra and Chacaltana (2001) offer consistent detailed descriptions of the situation of youth in the labor urban markets in Peru.

III. UNDERSTANDING THE BARRIERS TO EMPLOYMENT: FAILURES IN THE MARKETS FOR SKILLS FORMATION AND LABOR EXCHANGE.

16. The motivating questions for this study are: Why many workers in Peru experience significant difficulties to be mapped into suitable jobs? What are the market and institutional failures affecting skills formation and labor market insertion? Which public policies can improve the functioning of educational and training markets as well as the fluency of labor markets? How to spread the effort between interventions to strengthen skills formation (through generic skills formation and specific training, i.e., reducing structural unemployment) and those designed to improve the operation of the market for trading labor skills (i.e., minimizing frictions)?.

17. For reasons of scope and data constraints, the study takes as given macroeconomic and competitiveness factors (including labor and business regulations) and focuses on examining the market and institutional failures that affect skills formation and labor market fluidity in urban areas. The broad competitiveness and labor market regulatory issues have been examined in recent Bank studies for Peru¹⁶. The urban focus is due to the big difficulties of analyzing these issues in rural economies and labor markets, where analytical complexities and data restrictions are much larger. This urban focus imposes careful consideration to the applicability of the findings and policy implications to the whole labor market. However, for the most part, the conclusions are plausibly extrapolable and the policies relevant nationwide to the extent that the identified gaps and constraints to skills formation are most likely more acute in rural areas, and given the increasing integration of rural labor to the urban labor market through migration.¹⁷

18. In this context, the study is concerned with analyzing “barriers to employment” classified into two broad categories¹⁸:

- i) *Shortage of valued skills*: The supply of skills –generic (cognitive, socio-emotional), technical, professional— does not match the skills the market (employers) demand. The study approaches skills formation as a cumulative life-cycle process that builds on adequate health, nutrition and nurturing environments to develop cognitive and socio-emotional skills from pregnancy throughout childhood and adolescence followed by technical and professional skills in the adult life. This process is known to be plagued with market and public policy failures in the economics literature. When some of the relevant skills are in short supply, demand will bid up wages and rationing of qualified workers. This results in higher returns to these skills in the labor market. Variation in the quality of education and training will also lead to variation in returns to various types of schooling and training. The absence of these signals from the market to households on the going rate for different types of skills and to education and training institutions about the needs of the economy would allow

¹⁶ See the Country Business Climate Survey Assessment (World Bank, 2006), the Informality study (World Bank, 2008), and recent Labor Market study (World Bank, 2010).

¹⁷ The recent Bank labor market study (World Bank, 2010) concludes that internal migration has been quantitatively very important and a contributing force to labor productivity growth and improvement in socio-economic conditions of rural families.

¹⁸ See Sanchez Puerto (2009) for a more detailed typology and discussion. This study does not address other barriers such as constraints to labor demand and for self-employment as they relate to access to capital, markets, regulatory and broader competitiveness issues.

shortages in technical and professional skills to persist while some people continue to get an unmarketable education or training. Thus, returns to skills analyses can be informative about the issue of skills mismatches.

- ii) *Deficiencies in the job matching*: Even when the supply and demand for skills are broadly aligned, there may be inefficiencies and/or inequities linking the two. This may be due to the absence of reliable mechanisms to share information about vacancies and the skills supply or to failures in workers' signaling of their skills to potential employers due to barriers to obtain schooling credentials and inadequate mechanisms for skills certification and post-secondary accreditation. Spatial or geographic barriers to labor mobility, lack of labor market connections or discrimination (ethnic, gender or social exclusion) may also hinder access of low-income individuals to the higher paying jobs for their skills. These can also lead to unnecessary labor shortages in some market segments (frictional unemployment/underemployment).

19. The study's focus concerns both efficiency (productivity) and equity aspects of the Peruvian economy and labor market. On the efficiency side, human capital (skills) is known to be quintessential for enhancing the productivity of labor and rapid technological adaptation and innovation, thus for accelerating growth. The cognitive skills of the population have been shown to be a determinant of long-run growth. Countries with more technical and professional skills tend to attract investments more intensive in technology and R&D. This leads to virtuous circles where these investments increase the demand for skills and this, in turn, allows to maintain attractive private returns to skills during the skills supply expansion. There is also increasing recognition that a fluid labor market is important for sustainable increases in productivity. When the labor market efficiently matches supply and demand (for a given skills-set), it reduces time spent in job search and mismatches in the hiring process. This can steer the process of resource (labor and capital) reallocation which recent studies find can contribute to up to half of potential productivity growth in Latin American countries.¹⁹

20. On the equity link, getting valued skills and having access to employment opportunities is a clear prerequisite for low-income Peruvian families to fully benefit from economic growth opportunities and thus for reducing poverty and inequality sustainably. Low income families are likely to be most affected by both of the employment barriers above. They tend to lack: (i) opportunity and appropriate incentives to develop basic skills and invest in education and training.; (ii) adequate information about the skills the market would most value (so they can make wise choices on how to invest in their human capital); and (iii) good information about the availability of jobs suitable to their skills-set and the market wage for those jobs.

21. By understanding the extent to which each barrier affects effective labor market insertion of different populations, policymakers can better design policy interventions. To this end, the study has been guided by the following main hypotheses:

H1: Mismatch in the supply of skills: Low-income Peruvian workers lack the skills that employers most want and the labor market most values

¹⁹ See the discussion in IDB (2010) and references therein.

H2: Mismatch in the demand for skills: Low-income workers lack the means to acquire the types of skills that the market most demands

H3: Access and information about job opportunities: Low-income workers lack the means to efficiently and equitably search for and secure jobs

H4: Signaling skills to potential employers: Low-income workers do not have effective means to demonstrate their skills to employers

22. The stated focus on low-income workers mainly reflects the policy emphasis of the study. The analysis actually covers the entire labor force, with a lens of identifying particular constraints faced by the less skilled labor segment. Yet given that some of the issues bear on broader efficiency considerations (such as labor matching), the study also devotes attention to their policy implications even if they do not have direct impact on the low-income population.

23. In order to examine these hypotheses and related questions, the team first analyze existing data (household and firm surveys and administrative), in particular the *Encuesta Nacional de Hogares* (ENAH) and the urban labor force of the Ministry of labor (usual sources for labor market analysis in Peru), a new *Firm Informality Survey* developed by the Bank in 2007 (which asked small and medium size firms about the factors considered in hiring their workers), and data from the Ministry of Labor's employment service. Also, a new qualitative study on the most popular labor profiles and mechanisms of recruitment and selection of workers in six cities of Peru (Trujillo, Chiclayo, Arequipa, Cusco, Huancavelica and Huamanga) was commissioned based on interviews and focus groups to enterprises (mostly small and medium-sized business in industry and services sectors), workers, managers and students of job training centers. These analyses shed light and helped to further develop the policy questions and hypotheses. As in most LAC countries, Peru's labor force and household surveys lack the information required to examine the issues with rigor and provide more definitive answers.

24. Therefore, it was necessary to design and field a unique labour force survey –first of its kind in Latin America— specially designed to collect data related to the above barriers of employment and related hypotheses. This Survey of Skills and the Labor Market (*ENHAB 2010*) measure cognitive and socio-emotional skills of the working-age urban population, data related to skill mismatches (including knowledge and capacity to acquire market-relevant skills), the information on available jobs, search techniques, the ability to signal competencies and credentials, together with a very rich dataset on employment and socio-economic conditions. This is in itself a primary contribution of this analytical program as it provides a new data basis for policy-relevant analysis of the constraints to labor market entry for low income workers in Peru. The dataset is being made publicly available so that it can be further analyzed by Peruvian and international researchers to further examine these issues.

Box 1: The Skills and Labor Market Survey (ENHAB 2010): An innovative data tool

The National Skills and Labor Market Survey (ENHAB) was designed over 1 year and the data collected during Jan-March 2010. It is a self-standing nationally representative household survey covering urban areas (2,666 households from cities with population >70,000), the Coast, Highland, Jungle, and Metropolitan Lima. The survey instrument uses the same modules of Peru's regular household survey (ENAHO) for housing living conditions, demographics, educational attainment, employment/income (almost identical), and supplement these with modules to collect new data on:

Cognitive and socio-emotional skills tests. Applied to a random sample of the population age 14-50. With the exception of the PPVT-4 (a widely used standardized test of receptive language), cognitive tests were specifically designed for the survey to measure key cognitive skills (verbal ability, working memory, and numeracy/problem-solving). Socio-emotional skills are captured with self-reported tests for personality traits related to behaviors which the labor economics and psychology literatures suggest are important for labor market outcomes. (See Annex 2 for a description; for detail on the methodology for constructing the tests and the resulting test scores see Cueto et al 2020 and Claux and La Rosa 2010). The latter are measured with scales of the Big-five Personality Factors (Openness to experience; Conscientiousness; Extraversion; Agreeableness; Emotional Stability), widely accepted in psychology to characterize differences in broad personality traits (and associated behaviors), and Grit, a narrower trait capturing one's inclination and motivation to achieve long term goals (through perseverance of effort and consistency of interest).

School trajectories. Retrospective questions on experiences from pre-school through college/technical education, related to access (e.g., distance), characteristics of institutions attended as school quality proxies, self-reported scholastic aptitudes and performance, parental involvement, family economic conditions, choice of post-secondary career and institution and reasons, short-term training received and characteristics.

Labor insertion. Questions on age at first job, tenure, methods for job search (first job, commonly used, and most effective) to all workers, whether workers have credentials (e.g., diplomas), the reasons why not, whether employers required credentials during job search and how (e.g., diploma, interview, skills tests), reservation wages, factors affecting willingness to move for a better job, self-employment preferences, perceptions on factors affecting employability.

Family background. Parental (father and mother) education and occupation, family size and relation to siblings (number, gender, birth order), place of birth and residence.

25. As the survey breaks grounds in many ways in the region, it was complex and challenging to implement. The survey questionnaire was closely developed in collaboration with Peruvian labor economists and psychologists, and consulted with leading international psychologists and survey specialists in the Bank. The tests for skills modules were subject to extensive field pilot testing, training and careful selection of survey enumerators prior to the field work.

26. Despite the complexities and innovations of this survey, the data was successfully collected and analyzed. The analytical program concludes with this report that synthesizes the main findings and policy implications. The joint analysis of these data with Peruvian researchers, reflected in the various background papers accompanying the report, provides *prima facie* evidence on the importance of these issues in Peru and the developing countries context. The work has already had a broader impact beyond the country-specific analysis in Peru. The survey instrument has become a basis for similar ongoing work in other countries of the world under a Bank global project analyzing the importance of cognitive and socio-emotional skills for predicting labor market outcomes in about 14 developing countries throughout the world.

27. In what follows the report will show evidence to argue that three factors are increasingly constraining the ability of workers, especially from lower-income families, to tap on new employment opportunities: (i) gaps in valuable basic skills, that start very early in their lives due to inadequate nutrition and nurturing learning environments, and deficient quality of basic education (especially in rural areas), and (ii) information failures in the post-secondary skills formation process, due to deficiencies in the provision and regulatory framework of tertiary education and training services, leading many young Peruvians to sub-optimal skill investments; and, (iii) information failures in the job search process preventing workers' signaling of their skills to potential employers, in turn related to barriers to obtain schooling credentials and inadequate mechanisms for skills certification and post-secondary accreditation.

IV. SKILLS THAT MATTER FOR EMPLOYABILITY AND THE ECONOMY

A well-educated person for the 21st century global economy needs more than ever a multiplicity of skills

28. Over the last two decades, an intense debate has ignited in OECD and some middle income countries around the skills education systems produce and those workers need to participate productively in a global economy. In developing countries, educational progress, evidenced by higher levels of educational enrolment or attainment, has not entailed accelerated economic growth. Recent studies show that this is because the quality, rather than quantity, of education—ensuring that students actually develop valuable skills—is what matters to growth.²⁰ Schooling attainment is a first pass, composite measure of the skills embodied in individuals.

29. What are those skills?. From the recent labor economics literature one can distinguish four types of marketable skills:²¹ cognitive (e.g., verbal/literacy, numeracy, problem-solving), socio-emotional (e.g., self-discipline, perseverance, dependability, team work) –also called “soft” or “non-cognitive”—, technical and professional (e.g., vocational, career qualifications) and job-specific acquired through work experience. Due to lack of data, until recently it had not been possible to give an adequate account of these various skills, how they are developed (at homes and schools), and to document their reward in labor markets.

30. Skills formation is a cumulative life-cycle process. It can be thought as climbing a ladder since very early in life: as individuals age they build on the learning in each step to move up to the next step. There is a large body of literature documenting the importance of adequate health and nutrition during the so called “first 1,000 days” –from conception throughout the first 2+ infant years— in the development of basic cognitive and socio-emotional abilities and readiness to learn at school and in the adult life.²² The latter then crystallize in the development of marketable skills through informal learning, formal schooling, training and on-the-job learning during the life cycle. These multiple skills crystallize in an individual’s “scholastic ability” (*school readiness*) and “labor market ability” (capacity for performing a job and on-the-job skills acquisition). These skills correlate with higher educational attainment and enable individuals to learn and adapt to different tasks and problem-solving environments.

31. There are different sensitive periods for the formation of these multiple skills. Heritability and environmental influence both determine how these skills are developed²³. The development of the brain’s cognitive capacity is highly influenced by maternal and child health and nutrition from the womb through the first years of life –especially during the first 1,000 days of life, known as the nutrition window of opportunity-.²⁴ The quality of nurturing environments during infancy and childhood further develop cognitive ability and also shapes socio-emotional traits. While basic cognitive ability is well set by the teen years, formal schooling provide with subject knowledge and tools that enhance the cognitive capacity to undertake tasks and solve new

²⁰ See Hanushek and Woessmann (2009).

²¹ Heckman (2000), Heckman and Carneiro (2003), Cunha, Heckman, Lochner, and Masterov (2006) in the labor literature, and Barry et al (various years) and Roberts et al (2007) for reviews of the psychological literature.

²² See Heckman (1996, 2004), Mayer-Foulkes (2004) and Perry et al (2006) for a review of numerous studies.

²³ A solid body of evidence from biology (epigenetics), neuroscience, psychology, and education supports a consensus that the “Nature” vs “Nurture” distinction is obsolete and vindicates the power of public intervention to influence cognitive and socio-emotional abilities (Shonkoff and Phillips 2000; Cunha & Heckman 2010).

²⁴ See Mayer-Foulkes (2004) for a review of numerous studies and the 2005 World Development Report.

problems. Socio-emotional skills continue to develop and remain malleable through the adolescence and early adult years.²⁵ It has been shown that the latter can be influenced cost-effectively through public intervention over this period of life. Professional and technical skills are developed through tertiary schooling and training (formal or on-the-job), and job-specific skills then acquired through labor market experience.

32. Cognitive and socio-emotional skills are central to the policy debate of many OECD countries. They determine a person's "readiness to learn" over the life cycle by shaping the capacity and motivation to absorb new knowledge, adapt and solve new problems. This is crucial in a constantly changing economic environment where specific skills can be rendered obsolete.

33. This goes against the presumption that a focus on technical skills rather than basic competences (generic skills) is the key to increase the employability of workers. This is not to say that generic skills, particularly socio-emotional skills, are an alternative to academic qualifications. Instead, careful attention to them is a powerful way to improve educational attainment, life-long learning and thus employability.

34. Taking the development of these multiple skills seriously in Peru matters for three main reasons. First, they matter to employability as Peruvian employers consistently manifest that these are the skills they most want but find hard to get from working-age Peruvians, and, in turn, the labor market places a high value on them. Second, they matter to the long-term growth of the economy. Third, they matter to social mobility as there are significant gaps in these skills between Peruvians coming from better off and worse off families, and they also explain differences in educational achievement, including the pursue of a college education. What follows and section 5 present the evidence to substantiate these points.

Peruvian employers demand both cognitive and socio-emotional skills

35. Data from both firm and labor surveys and anecdotal evidence clearly indicate that Peruvian employers and the labor market values both cognitive and socio-emotional skills. Peruvian employers generally complain that workers do not have the necessary skills, although it has not been clear *which* skills are scarce.²⁶ Figure 1 presents novel data on the revealed demand for skills of employers from micro and small enterprises surveyed in 2007/08 (which account for the lion share of employment), and what means they rely on to assess skills.²⁷ Roughly one half of employers cited the lack of "qualified" or "competent" staff –akin to cognitive and technical skills- as the main problem in hiring suitable workers (panel A). Around 40 percent cited the lack of specific socio-emotional skills related to a dependable work ethics or various (grouped under "others") personal qualities such as team work, persistency, adaptability, initiative. Likewise, data from the national (public) employment service (panels C-D) indicates that employers seek both cognitive skills and socio-emotional skills (related to work ethics, reliability and interpersonal relations) regardless of workers' formal schooling, and hints that the latter maybe more important for the less educated. Today, employers require these "soft" skills to meet the

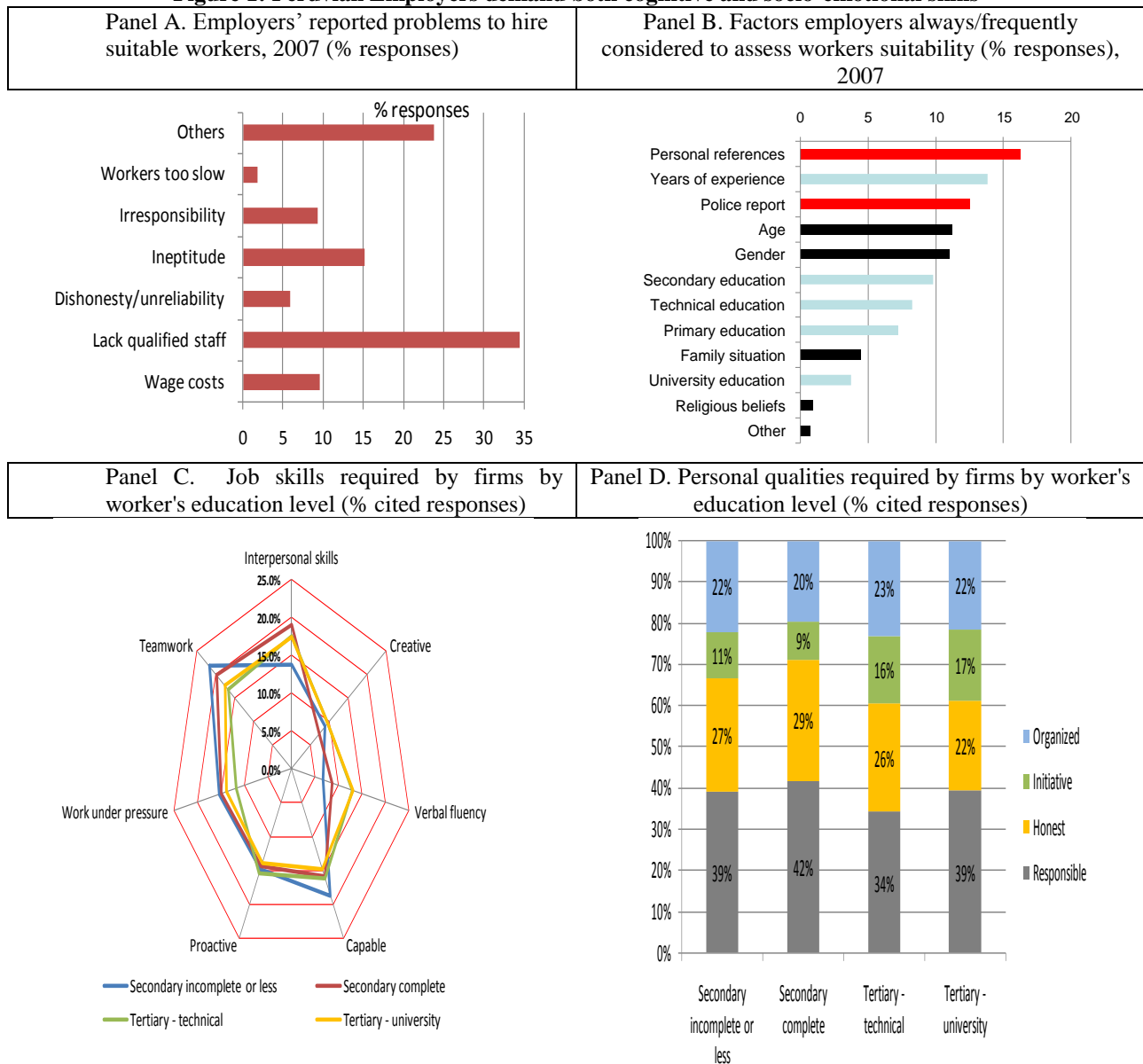
25. See Heckman and Cunha (2010) and Heckman (1996, 2004).

26. Evidence from the 2007 Peru Investment Climate Assessment.

27. Data comes from a recent Bank-funded Survey covering 802 micro and small informal (unregistered) firms in Lima, Callao, Arequipa, Cusco, Huancayo and Trujillo, and the employment placement service ran by the Ministry of Labor which primarily gathers data on vacancies and the supply of less skilled workers.

changing demands of the market. There is some evidence that socio-emotional skills can be more important in certain low skill occupations, in particular in the service sector.²⁸

Figure 1: Peruvian Employers demand both cognitive and socio-emotional skills



Source: Own estimates based on firm informality survey (2007) and employment service data (2008). Panels (A-B) based on the survey in 2007/08 financed by the World Bank that covers 802 micro and small enterprises informal (non-registered) in Lima, Callao, Arequipa, Cusco, Huancayo and Trujillo. The data correspond to half of employers in the sample who reported problems hiring qualified workers; Panels (C-D) are based on data of the employment service (2008) administered by the Ministry of labour, which collects data on vacancies and the supply of workers, mostly in the less skilled segment.

36. Meanwhile, when assessing workers suitability the interviewed firms overwhelmingly reported relying on personal references and police reports over education credentials (panel B). These types of reference checks are commonly used to determine whether a worker possesses

28. See Bowles, S, Gintis, H, and Osborne, M. (2000).

skills not easily verifiable by academic credentials. In fact, these small firms tend to distrust the available institutions and qualifications, relying heavily on personal recommendations when hiring workers: three fourth rely on family members, other trusted people (“gente de confianza”), existing staff and the recommendations of other firms. The greater weight given to years of work experience over formal educational and training qualifications suggests the latter have low power to discriminate among potential applicants.

37. This evidence is corroborated by a study prepared for this report that collects qualitative data through structured and other informal interviews with Peruvian employers of larger firms (See Box 2). Quite often when these employers complain that the labor force does not have the right skills, they refer to qualities related to both cognitive and socio-emotional skills. A highly illustrative assertion noted by major employers in the mining and banking sectors was: “We try to test their (workers) communication and numeracy abilities although we already know we will have to train them. What we do not know is if they will show up on time or complete the training”. This is consistent with socio-emotional traits contributing to workplace discipline, which makes them valuable to employers.

Box 2: Qualitative Evidence on the demand for skills in the Peruvian Labor Market

A qualitative study on the most popular labor profiles and mechanisms of recruitment and selection of workers in six cities of Peru (Trujillo, Chiclayo, Arequipa, Cusco, Huancavelica and Huamanga) was prepared as an input to this report. The methodology was based on interviews and focus groups to enterprises (mostly small and medium-sized business in industry and services sectors), workers, managers and students of job training centers and promoters of labor insertion programs.

The study found that for positions that do not require high qualifications, employers are dissatisfied with the performance of their employees, and blame this on schools’ failure to provide workers with basic skills. Employers highly value their employees’ “desire to work”, customer service, and commitment to work and to the company. The widespread perception is that workers lack these positive attitudes towards work, capacity of adaptation, and motivation, and that this reveals a failure of the schools and training institutions as well as the family and social environment which do not require young people to “exercise some degree of effort”. A hotel owner in Chiclayo claimed: “We prefer to employ someone who has not studied but who shows interest”. Another in Trujillo stated: “There is a lack of customer service... a hotel is about service, attitude”.

Even for jobs that require higher education levels, most companies value more work experience and attitudes of the applicants than the academic formation. The main reason is that employers have a negative perception of job training centers (CETPROS), technical institutes (IST) and universities, so they consider prior work experience as a better indicator of workers’ qualifications. A Suitcase Factory’s Owner in Trujillo said: “No matter if you have studied, you need work experience ... better to have practice than education”.

Regarding mechanisms of recruitment and selection of staff, the study found that companies usually do not rely on very formal procedures (with the exception of private banks and the public sector), and are not very demanding in assessing the cognitive abilities of applicants. Instead, they take more into account the attitude and desire to work, which are assessed through personal references and during job interviews. The reasons expressed for this are that employers would end up investing much time to find a worker that really fits what they want, considering that basic skills formation and job training are deficient. Another reason is that the companies take it as a given that they will need to train them. An owner of a mill in Chiclayo sentenced: “We have to train all new entrants and carry on with the cost involved ourselves”.

Firms report delays in finding suitable workers with specific job skills and often seek in Lima and other cities. Some decide to take the “least bad” applicants and train them “from scratch”, and others are “resigned not to have workers with the desired qualifications”. A Construction Manager in Cusco put it: “I’ve become more demanding, but occasionally there is a shortage of workers, then I must take the available ones but exercise more supervision”.

Source: Based on SASE (2009).

38. In their high regards for socio-emotional traits, Peruvian employers are not unlike their peers in OECD and other middle income countries. Bowles and Gintis (1998) cite similar evidence for the U.S. and U.K. In a survey of 3,000 U.S employers which asked “When you consider hiring a new nonsupervisory or production worker, how important are the following in your decision to hire?”, employers ranked “attitude” followed by “communication skills” above “industry based skill credentials”, “years of schooling”, “score on tests given by employer” and “academic performance”. In a survey of 1693 British employers, of the somewhat more than a third of the establishments reporting a “skill shortage”, 62 percent reported “poor attitude, motivation, or personality” and 43 percent “lack of technical skills” as the recruitment problem. Recent studies for countries as varied as India and the Caribbean report similar evidence showing that employers rank soft skills as important as cognitive and technical skills. In the study of the demand for engineers in India, quite similar socio-emotional traits were, strikingly, ranked at or above technical qualifications and credentials.²⁹

Schooling and these multiple generic skills matter to employability and social mobility

39. To what extent generic skills actually enhance employability in the Peruvian labor market as found elsewhere?. Is there a separate return to both schooling and these skills?. These questions can now be examined using the ENHAB data which measure cognitive and socio-emotional skills of the urban Peruvian labor force (See Box 1 in Section 2).

40. Measured skills include verbal ability, working memory, and numeracy/problem-solving for the cognitive (See Annex 2). Socio-emotional skills are proxied with self-reported tests for personality traits of the *Big-five Personality Factors* (Openness to experience; Conscientiousness; Extraversion; Agreeableness; Emotional Stability) –widely accepted in psychology to characterize differences in broad personality traits–, and *Grit* –a narrower trait capturing one’s inclination and motivation to achieve long term goals (through perseverance of effort and consistency of interest). These personality traits correlate to behaviors which the labor economics and psychology literatures have found to be important predictors of labor market outcomes, such as discipline, perseverance, dependability, consistency.³⁰ (See Annex 3 for a description). Thus, the resulting score measures are used as indicators of socio-emotional skills. This data is collected together with a rich dataset on employment and socio-economic conditions (See Box 1).

41. These data is used to estimate the earnings differences associated to cognitive and socio-emotional skills. When assessed individually *without* adjusting for workers’ schooling attainment, the main findings are³¹:

- Cognitive skill measures correlate with higher earnings, from around 18 percent (receptive language, numeracy) to 9-11 percent (working memory, verbal fluency). That is, workers scoring 1 standard deviation higher in these skill domains enjoy hourly earnings 9 to 18 percent higher.

²⁹ World Bank (2007), Blom and Saeki (2010).

³⁰ See Cunha, Heckman, Lochner, and Masterov (2006).

31. Mincer regressions are fitted for hourly earnings on each skill measures at a time without controlling for years of schooling, controlling for actual work experience, gender, ethnicity, geographic location, and parental (father and mother’s) education. See Diaz, Arias and Vera-Tudela (2010) for details on the estimations.

- In the case of personality traits that proxied for socio-emotional skills, when schooling and cognitive skills are unaccounted, workers scoring 1 standard deviation higher in the perseverance facet of Grit earn 13 percent more, those scoring likewise higher in Big-five scores in extraversion, emotional stability, and openness to experience earn 8 percent more, while for agreeableness (facet cooperation) earnings are 10 percent lower.

42. These earnings premia reflect both a direct effect of skills on earnings and any indirect effects arising from their correlation with educational attainment (as discussed further below). Table 1 present estimates of the earnings returns (premium) to cognitive and socio-emotional skills purged of the simultaneous correlation with worker's schooling and among themselves, using a summary measure of cognitive ability^{32/33}. The average return to overall cognitive ability is 10 percent, while among socio-emotional traits there are returns to *Grit-perseverance* (9 percent), emotional stability (5 percent), and a penalty (8 percent) for those scoring 1 standard deviation higher in the agreeableness-cooperation trait (a similar result has been found in the U.S). These estimates fall within the range found in studies for OECD countries. Duckworth et al (2010) using social security earnings in the U.S. also find that agreeableness correlate with *lower* earnings controlling for schooling, other Big-five traits and cognitive ability measures, and other individual characteristics.

Table 1: Returns to schooling, work experience, cognitive and socio-emotional abilities in Urban Peru (Percentage increase in hourly earnings)

Years of schooling	0.055***
Years of work experience	0.030***
(Years of work experience) ²	-0.008**
Overall cog ability	0.088***
Extraversion	0.056
Agreeableness-kindness	-0.044
Agreeableness-cooperation	-0.080***
Conscientiousness	-0.027
Emotional Stability	0.049**
Openness	-0.002
GRIT consistency of interest	-0.002
GRIT perseverance of effort	0.080*

Coefficients from two-steps Mincer regression. Dep. Variable in 1st step: Log (hourly earnings). 1st step regresses cognitive ability and instruments education to compute cognitive ability residualized from education, which is then used in 2nd step (Hansen, Heckman & Mullen 2004). The instruments are individuals self-reports of distance (in time units) to schools they attended (primary or secondary education), effort exerted at school, and relative academic performance. Control variables in Mincer: work exp. and square, gender, ethnic group, zone of residence, parental education. Personal traits in z-scores. T-statistics in brackets. *** p<0.01, ** p<0.05, * p<0.1. N=1,142 (age 14-50). R-squared= 0.20

32. This uses two-step instrumental variables Mincer regressions to adjust skill measures for their simultaneous correlation with schooling. See Diaz, Arias and Vera-Tudela (2010) for details on the estimations.

33. The overall measure is constructed using factor analysis as it is standard in the psychological literature that the high correlation between cognitive skills makes it difficult to isolate variation in the various skill measures.

43. The results are partially aligned with most of the qualities employers value (from figure 1). However, some of those qualities (e.g, responsibility, tidiness) would relate directly to the trait of Conscientiousness. Yet no significant relations between this trait and earnings were found. Moreover, Agreeableness linked to cooperation correlates with lower earnings, findings that again have been replicated in other studies. Yet employers (per Figure 1, Panel C) seem to value “interpersonal skills” that would be correlated with agreeableness. How can these disconnects be interpreted?.

44. Further analysis suggests some possible reasons for these discrepancies, including limitations of the broad Big-five personality trait data to proxy for narrower socio-emotional skills. First, it is well known in the personality psychology literature that responses on self-reported scales are affected by ‘social desirability bias’, that is, people may tend to respond more according to how they would like to be seen by others rather than by how they actually behave regularly. A closer examination of the data suggests that the responses to the items on Conscientiousness maybe more severely affected by this problem. The responses are very skewed toward positive self-assessments so that the range of variation of the data in the sample is very limited. This could explain the insignificant results obtained in the earnings analysis.

45. In the case of agreeableness, there are at least two possible interpretation of the results. It may be that although employers value cooperation for keeping a good team environment, in reality less cooperative people are more likely to get ahead by doing better than others rather than cooperating. On the other hand, it may be that at the low end of the distribution, being highly “agreeable” might lead to extreme passivity or represent lack of assertiveness or initiative, which might result in lower wage levels. Anecdotal evidence suggests this is a plausible phenomenon in Peru’s labor market. These are issues that warrant further research. In particular, assertiveness skills linked to problem solving and decision-making may be important to consider within the social-emotional skill framework. It would be important for future studies to examine more refined constructs of skills to complement measures of broad personality traits.

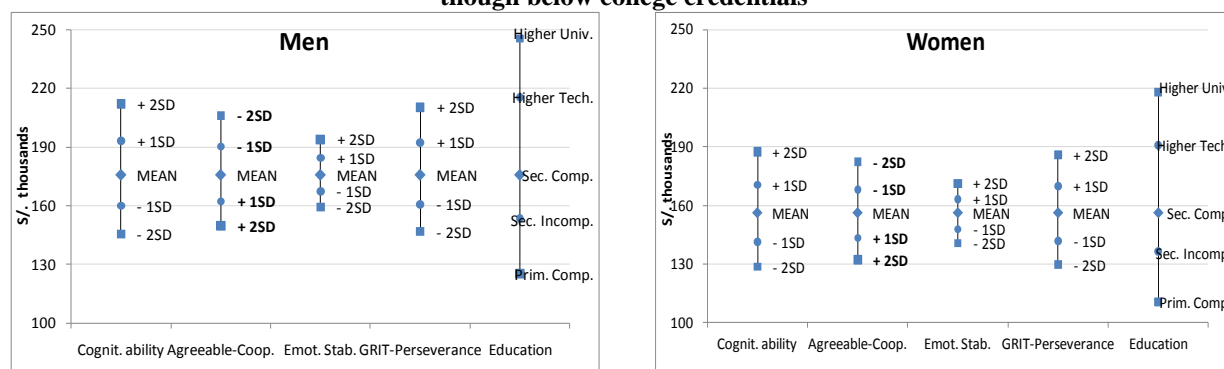
46. The cognitive and socio-emotional skills that have been measured do not exhaust the mechanisms by which schooling affects earnings (and thus labor productivity). The average return to schooling remains significant at nearly 7 percent, reduced by roughly 2.5 percentage points after we account for measured skills.³⁴ This finding is consistent with other international studies and suggests that a significant portion of the returns to schooling reflects that schooling goes hand in hand with the development of generic skills, but that the lion share is due to aspects or correlates of schooling largely unrelated to the skills measured. That is, the more educated Peruvian workers earn more not solely because schooling proxies for those with higher innate ability, better parental social status and other traits rewarded in the labor market.

47. Moreover, returns to actual years of work experience (measured from worker-reported age of first employment) are significant, and show the usual inverted U-shape. Earnings increase at a declining rate starting at about 3 percent for the first year of work experience up to reaching 40 years of age, and from this point one earnings decline with each year of work experience. These estimates are very much within the range found for developing countries where labor experience tends to be relatively more valued than in developed countries.

34. This is a fall from 9.6 percent when we do not control for skill measures.

48. As shown in Figure 2, the estimated effects are economically important as they imply significant differences in the life-time earnings of Peruvian workers. Socio-emotional skills like GRIT-perseverance entail a life-time earnings advantage comparable to that of having higher cognitive ability. A typical worker scoring 1 or 2 standard deviations higher in GRIT finds himself with similar life-time earnings as a worker in similar positions in the cognitive ability distribution. Educational attainment differences produce higher earnings inequality – college educated command the biggest advantage. Both cognitive and socio-emotional skills can compensate for low schooling. As in the OECD countries, the evidence confirms the important role of both cognitive and socio-emotional skills and schooling itself in the performance in Peru’s labor market. As discussed next, the earnings gains aggregate up to the economy overall.

Figure 2: Cognitive and socio-emotional skills give comparable advantage in life-time earnings, though below college credentials



Note: Simulations of net present value of earnings from age-earnings profiles over work life (graduation-65 yrs retirement) for typical workers (schooling base= secondary) using Mincer regression parameters (discount rate 5%). This is illustrated for different levels of cognitive and socio-emotional skills, from +2 to -2 standard deviations (STD) above and below the average skill in the sample population of test takers.

Source: Own estimates based on ENHAB data (2010).

Generic skills matter to the long-term growth of the economy

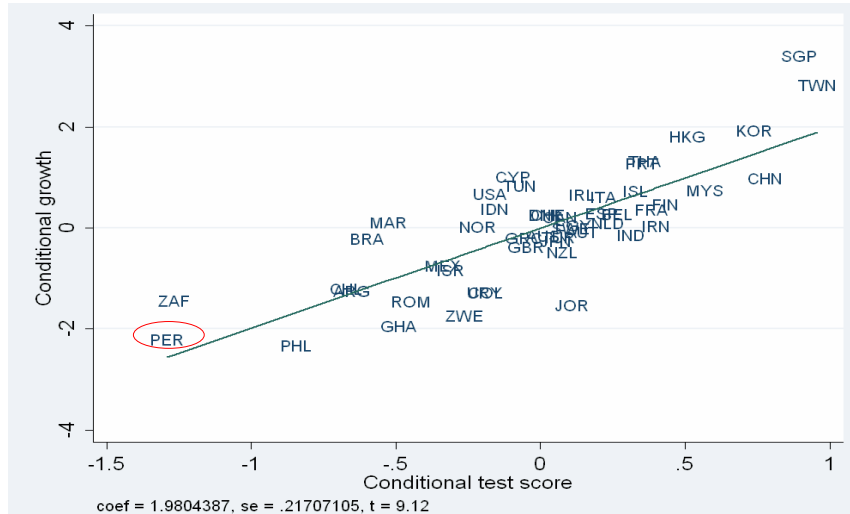
49. The level of cognitive skills of the school-age population has been shown to be a crucial determinant of long-run growth.³⁵ Figure 3 depicts how a sustained improvement in the disappointing performance of Peru in developing cognitive skills is essential to its long-term economic growth. The level of school attainment does not even have a significant relationship with economic growth once cognitive skills are accounted for.³⁶

50. Estimates of historical growth relationships from recent studies suggest that a modest goal of having Peru boost its average PISA scores by 71 points over the next 10 years – which sustains the pace of performance gains the country achieved between 2000 and 2009, and catches up with Chile, Mexico or Uruguay – would add 1.2% to its *long-term* annual per capita growth rate. A more ambitious goal of doubling the pace of performance gains –which would bring Peru to the current average OECD performance (a PISA score of about 500), would boost *long-term* growth by 2.4%. These are significant improvements and they imply that aggressive cognitive skills development is essential to building a more prosperous Peruvian society.

35. Hanushek and Woessmann 2009.

36. Idem.

Figure 3: Cognitive skills are essential to Peru's long-term growth



Note: Results from regression analysis of per capita GDP growth on performance in PISA tests, conditional on other factors.

Source: Hanushek and Woessmann 2007.

51. Therefore, basic cognitive skills in numeracy, literacy and problem solving should be a core measurable output of social programs and the health and education systems in Peru. But emphasis on and systematic assessment of this set of core cognitive skills should not be at the expense of the development of socio-emotional skills. While there is lack of international data to reliably benchmark and study the impact of these skills on overall economic performance, a fast growing literature shows that these “soft” skills are as strong predictors of positive labor outcomes and educational achievement as are cognitive skills. These have been now documented widely in OECD countries and just recently in developing countries, for example Chile and India, and as discussed before now in Peru.³⁷ Both cognitive and socio-emotional skills have been shown to also positively impact other important social outcomes such as crime, substance abuse, teen pregnancy, and health (e.g., obesity). Therefore, curricula, learning standards and pedagogic practice in pre-school and basic education should also take them seriously.

Uneven returns to various types of schooling signal mismatches, information failures and quality problems

52. The previous results underscore the important role of education in fostering the development of these generic skills as well as subject knowledge and qualifications deemed important for employability in the labor market. Why would employers pay the education premium otherwise? While there is evidence that schooling also performs a credentialing function in Peru (see Section 6),³⁸ as found in other countries the resulting diploma effects do not account for the full correlation between years of schooling and earnings.³⁹ Thus, despite the

37. See Heckman, Stixrud and Urzua (2006). There are also recent studies for Chile and India.

38. See Yamada and Castro (2010).

39. Likewise, Bowles and Gintis (1998) report, after surveying various studies, that controlling for cognitive abilities in earnings regression, on average reduces the coefficient of years of education by eighteen per cent.

perception among some Peruvian circles of the little productivity content and credibility of the schooling signal, those with more schooling earn more on average in substantial measure because they also acquire valuable knowledge and qualifications as well as cognitive and socio-emotional skills.

53. However, studies show that the quality of secondary and university graduates and labor training in Peru provided is very heterogeneous. There is a perception that the education system, both basic and post secondary, is fragmented and offers distinct paths of access and quality to develop general skills among the young population. The generalized perception in Peru is that too often individuals invest in the “wrong” types of skills and careers. The popular claim is that too many go into saturated dead-end professions (law, communication, pedagogy)—and end up driving taxis—while the payoff to some technical skills and careers (e.g., engineering, technicians) are very high.

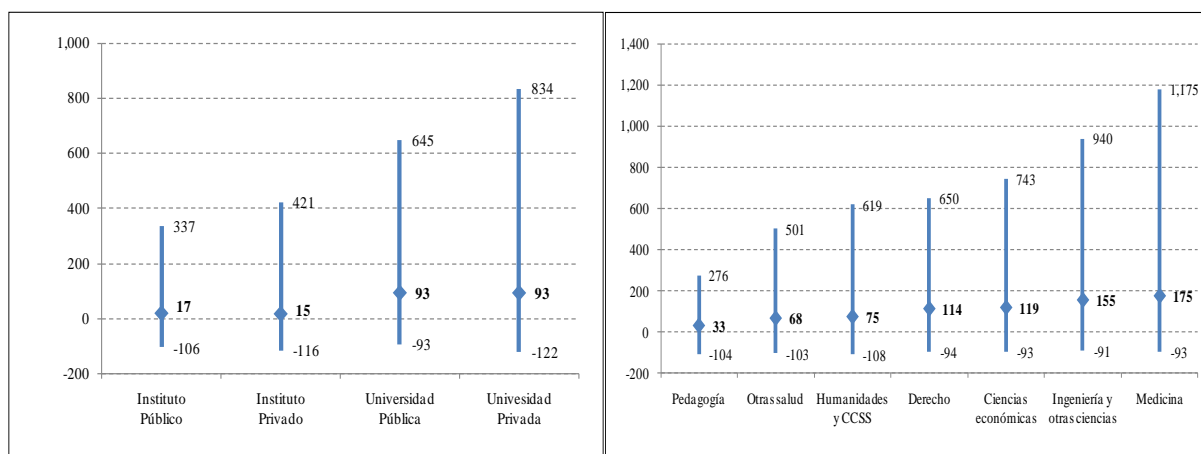
54. In fact, many workers are led to sub-optimal investments in technical and professional skills which do not yield adequate payoff. The evidence comes from comprehensive analyses of the returns to schooling in Peru⁴⁰. First, the returns to education are markedly increasing with the level of education, as has been widely documented in Latin America.⁴¹ A university education (public and private) offers higher rates of return than primary or secondary, which are comparable to other alternatives of financial investments available in Peru. Faced with uncertain prospects to reach these education levels poor children are more likely to drop out from school even before liquidity constraints become more binding. Thus, the ‘value-option’ of reaching tertiary education is the main incentive to invest in basic education.

55. Second, there is important variation in the returns to different types of education, university careers, and across workers. In particular, tertiary non-university education and some college careers show returns that are not very attractive, and even negative when direct costs are factored in. These results are shown in Figure 4, which present the present value of investments net of direct and indirect costs for different types of schooling and careers, for an average earnings performance and bottom and top performance to proxy for the risks entailed by educational investments. Even if average returns to education are high, at any education level, there is considerable variation in returns to schooling. Inequality in the labor market pricing of skills has feedback effects to the incentives to invest in skills. Yamada (2006) argues that significant deficiencies in the functioning of education and labor training markets—particularly the lack of reliable signaling and quality assurance—lead to significant mismatches between individual and family investments in tertiary education (excessive people entering dead-end careers and occupations) and the demands in the labor market.

⁴⁰ Yamada (2006) and Yamada and Castro (2010).

⁴¹ See for example the studies in Bourguignon, Ferreira and Lustig (2005), De Ferranti et al. (2003) and IDB (2004).

Figure 4: There is wide variation in the payoff to higher education investments



Note: Yamada and Castro (2010) derive these from non-parametric net present value of earnings over the projected work life using the top and bottom deciles distributions of earnings conditioned by experience to proxy for poor and outstanding performance in the labor market for each type of institution and career. The estimates deduct the direct and indirect costs of each type of schooling/career.

Source: Yamada and Castro (2010).

56. This can partially explain patterns of enrollment in free public universities. Eligible persons perceive that their expected returns to tertiary education do not compensate the present value of foregone earnings. Gaps in educational enrollment in secondary and above persist in Peru where public university (which accounts for about half of enrollment) is largely free. Thus, the importance of policies to provide information and quality assurance in order to increase the returns to education for the poor and help them reach higher education.

57. There is also evidence of considerable variation in the rate of return to various types of training programs.⁴² The rates of return to firm-based training programs, and increasingly those offered by universities, are higher than those of the main technical skills formation institutions.⁴³ This suggests that the latter are not equipping trainees with valued skills. Likewise the studies that have examined the impact of large, publicly funded technical training on employment and wages find low or zero rates of return.⁴⁴ Previous studies suggest that training institutions have outdated curricula, divorced from market needs, and as a result their programs have low rates of return. Meanwhile rigorous studies of the country's small youth training program, *Pro-Joven*, which combine in-class room training with firm internships, have yielded important positive impacts.⁴⁵ This is line with the findings from OECD and elsewhere in the region.⁴⁶ We turn next to characterize Peru's performance in the development of these multiple skills for all its population, while highlighting the policy challenges and opportunities to improve them.

42. Yamada and Castro (2010), Yamada (2006), Saavedra and Chacaltana (2001), and Ibarrán (2006).

43. Saavedra and Chacaltana (2001) and Chacaltana (2010).

44. Saavedra and Chacaltana (2001); Yamada (2006); Chacaltana (2009).

45. Ñopo and Saavedra (2003), Diaz and Jaramillo (2006) and references therein.

46. The evidence is summarized in a recent Meta analysis of 345 studies of training programs from 90 countries around the world (Fares and Puerto 2008). In comparison to classroom training alone, youth-internship training programs are shown to increase the likelihood of positive labor market impact by 30 percentage points, and by up to 53 percentage points when combined with other services.

V. SKILLS FORMATION: HOW WELL DOES PERU FARE?

Peru is underperforming in the development of cognitive and socio-emotional skills of all its population.

58. Peru experienced an important expansion of coverage of education and health services since 1990. For instance, the country has near universal primary education coverage and is above or at LAC regional averages in secondary and tertiary coverage, and years of completed schooling of its labor force (Table 2). However, the quality of services remains inadequate. While Peru has considerably improved school attainment in the last couple decades, student learning has lagged considerably.

Table 2: Peru and Latin America, Comparison of Education indicators, circa 2009

	Peru	LAC average	Ranking		
<i>Enrolment rate</i>					
Pre-primary (Net)	69.1	58.1	7	of	21
Primary (Net)	94.4	93.9	11	of	22
Secondary (Gross)	89.1	84.7	11	of	24
Tertiary (Gross)	34.5	36.8	10	of	19
<i>Labor force</i>					
Years of education	8.7	7.8	10	of	25
<i>Quality Measures</i>					
SERCE (Math-6th grade)	490	503	10	of	17
PISA (Math- 15 year olds)	367	395	7	of	7
<i>Public expenditure in education</i>					
% as GDP	2.7	4.6	19	of	19
% as total gov.expenditure	20.7	16.1	2	of	14

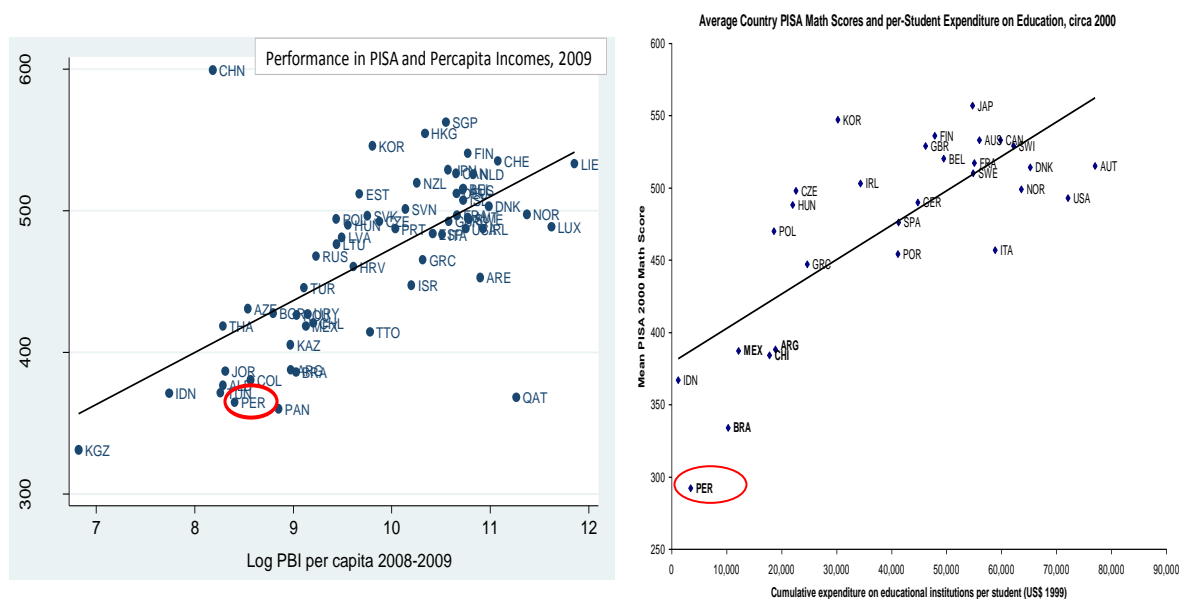
Source: Based on LAC Education Fact Sheets, LCSHE (2010) and OECD (2010).

59. Despite recent improvements in both national (2nd grade)⁴⁷ and international student achievement tests of basic cognitive skills (reading, numeracy), the majority of Peruvian students do not achieve sufficient cognitive standards and rank at the bottom of regional and worldwide comparisons (Table 2).⁴⁸ Figure 5 shows that Peru is far below what is expected from its income per capita level and educational investment effort –measured as percent of GDP— in the early 2000s PISA match assessment of 15 year old high-school students, a situation that has not changed in the recently released 2009 assessment.

47. Between 2007 and 2009 the proportion of second grade students reaching Level 2 in the national reading comprehension assessment increased from 17 percent to 23 percent, and in math it rose from 9.4 to 13.5 percent. In the same interval, the proportion of students lagging below Level 1 decreased from 30 to 23 percent in reading, and from 55 to 49 percent in math.

48. See World Bank Education Policy Note.

Figure 5: Peru is far behind expectations in the development of cognitive skills



Source: Based on OECD (2010) and Vegas and Petranow (2008).

60. As noted before, this underperformance in youth cognitive skills development likely originates early in their lives. Despite recent progress, developmental outcomes of far too many Peruvian children remain unsatisfactory. Chronic malnutrition (stunting) rates for children under-5 fell from 28.5 percent in 2007 to 24.2 percent in 2009, above what is expected from Peru's income level. Rural institutional births coverage has increased from 49.4 percent in 2007 to 55 percent in 2009—hampering efforts to reduce maternal and peri-natal morbidity and mortality. Thus, today above half a million five year old Peruvian children are stunted, and thus start off with a severe impairment to fully develop their skills potential. This situation is particularly acute in rural areas and among indigenous communities.

61. Not surprisingly, inequalities in skills development in Peru start very early in life. The Young Lives project at Oxford has collected comparable data on the cognitive development (measured by receptive language) of 5 year old children in Ethiopia, India, Vietnam, and Peru.⁴⁹ When comparing the performance of children in the richest and poorest wealth quintiles, the difference in cognitive skills measured in standard deviations, was 1.53 in Peru compared to 0.57 in India, 0.77 in Vietnam, and 1.00 in Ethiopia. Clearly, in relative terms, the poorest children start off much further behind their better-off counterparts in Peru than in the other three countries. There is no comparable international data to benchmark national differences in children's socio-emotional skills. However, the negative impact of malnutrition on brain development has been

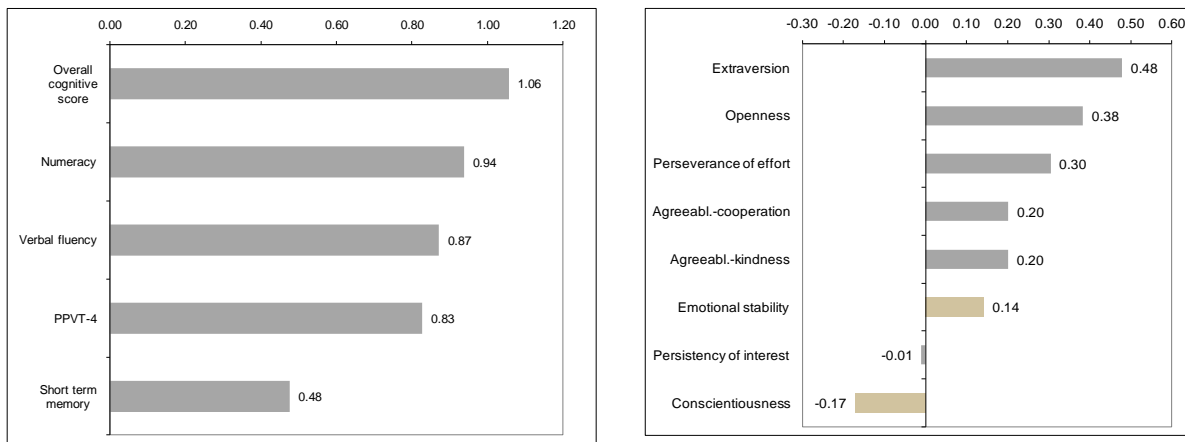
49. The same instrument was applied in nationally representative samples of each of the four countries--the PPVT, translated and adapted into the local language.

shown to affect executive function responsible for self and emotional regulation⁵⁰, and in Peru is actually linked to lower cognitive ability (measured by receptive language development)⁵¹.

62. These early handicaps carry over to hamper Peruvian children’s readiness to learn in school. Less than a quarter of second grade students reaches full sufficiency in literacy and almost half are unable to do basic 2nd grade math -again these outcomes are far worse among children from rural and indigenous communities. In secondary education, according to the latest PISA results, Peru is the country where the socio-economic characteristics of students have the greatest effect on learning gaps among students, even when they attend the same schools. In Peru 27% of the dispersion of scores on the comprehension test is accounted by socio-economic factors compared to Chile 18.7%, Mexico 14.5% and Brazil 13%.⁵²

63. Strikingly, these socio-economic gaps in skills carry over to the adult population. Figure 6 shows the results from the ENHAB skills survey⁵³ of differences in cognitive skills of the working age urban population belonging to two extreme groups: Persons whose mother has tertiary education, live in the Coast, and went to private schools versus those whose mother has secondary incomplete or less, live in the Andes or Jungle, and attended public schools. The better-off workers are in a clear disadvantage compared to their peers from the least advantage families: reaching 1 standard deviation for the measure of overall cognitive skills. Figure 6 also presents the same comparison for the scores in socio-emotional traits: the gaps between the extreme groups are not as marked, in all cases being below 0.5 standard deviations.

Figure 6: Workers of worse-off families have lower cognitive and socio-emotional skills (Differences between well-off and worse-off socio-economic groups)



Source: Cueto et al based on ENHAB (2010). Gaps in normalized (z-) scores, i.e., units are standard deviations. See main text for a description of the socio-economic groups.

64. Taken together with the earlier results on employer demand and returns to skills, it is clear that workers from worse-off families tend to lack the generic skills that are most valued in the labor market. Moreover, socio-economic gradients are an important driver of intergenerational income inequality in Peru.

50. Duckworth et al (2010).

51 Cueto and Muñoz (2009).

52 OECD (2010).

53. There is no comparable international data to benchmark Peru with other countries in terms of national differences in cognitive and socio-emotional skills of the adult population.

65. The policies to close these skill gaps span nutrition, health, education, and training. The accompanying Thematic Policy Notes focused specific detailed attention to each of these areas, and derive specific recommendations grounded on a diagnostic of the advances, current situation and potential of specific programs in Peru. These Notes discuss the specific problems being addressed, conditions for success, and references to lessons on design and implementation issues from around the LAC region and beyond. Appendix 2 and the concluding session draw on their main recommendations tying them to the framework and evidence presented here.

The development of technical skills and professional is hindered by deficiencies in generic skills formation and in the available information on quality post-secondary education and employment opportunities.

66. International studies show that a person well-equipped with generic skills is better prepared to acquire technical, professional and specific skills over the adult life through formal tertiary education, training and on-the-job. A recent study using the ENHAB survey data corroborates this finding for Peru.⁵⁴ The new data from the ENHAB skills survey corroborates this finding for Peru.⁵⁵ Figure 7 depicts the effects on the propensities to pursue higher education, whether college or technical education, of changing a person's socioeconomic status from low to middle and his cognitive skill and Grit (ability to sustain effort and focus on goals) from the bottom to the upper third of the distributions of these skills. It shows (left bars) that cognitive skills are more important than financial constraints in determining the pursue of higher education. In discriminating those who take the college vs technical path (right bars), both Grit and cognitive skill are the predominant factors, and, strikingly, financial resources play no role. Fostering generic skills through basic education, not only grants an individual better employability prospects as a high-school graduate at the same time it best prepares him to successfully pursue a high return college education.⁵⁶

67. The results show that cognitive skills are more predominant than financial constraints to determine the transit to tertiary education, and along with the determination to pursue long-term goals discriminate better between those who opt for the University and those who opt for a technical education. The results are consistent with the selection mechanisms in many public and private universities in Peru where admission tests seeking to measure the ability of the applicants are the dominant criterion for admission. The development of generic skills in basic education does not only offer better employment prospects for a high school graduate, but at the same time prepares individuals to continue successfully with a college education for a greater return.

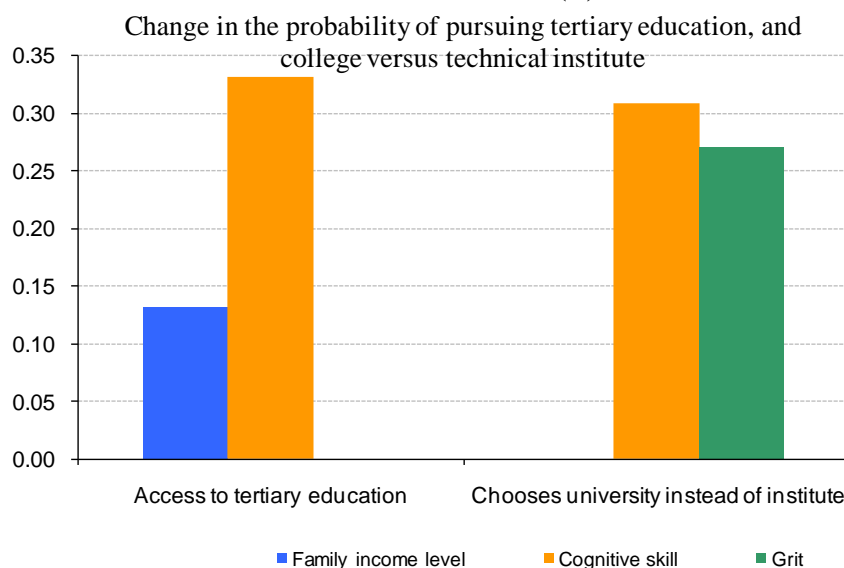
68. Another policy implication of the findings is that credit and/or scholarship schemes alone will not suffice to redress the inequity in higher education enrollment in Peru. Such schemes should be accompanied by a rigorous selection process to identify qualified (e.g., college-ready) beneficiaries. Since the returns to college education in Peru are high and low and variable for technical education, it is also critical to align incentives to ensure a match with high quality education providers tied to the ongoing accreditation process.

54. See for example the review by Heckman and Cunha (2010).

55. See Castro, Yamada and Arias (2011) for details.

56. Perseverance and passion for long term goals was also found to be a predominant trait, over cognitive ability, of those who attend high quality (Ivy league) college education in the U.S (Duckworth et al 2007).

Figure 7: Effects on higher education enrollment of increasing monetary resources vis a vis cognitive and socio-emotional abilities (*)



(*) Effects are marginal probability changes from a bivariate probit with two choices: assisting or assisted to tertiary education or not, and assists or assisted to college or Institute. The effects correspond to an increase in the self-reported family income level at the time of completing secondary education, from low to medium, and an increase in skills implies a movement from the lower to the upper third of scores in the respective skills tests distributions.

Source: Castro, Yamada, and Arias (2010) based on World Bank. ENHAB 2009-2010.

69. This begs the question of whether individuals have adequate information and means to wisely select and pursue a course of study and type of skill investment and, if so, what other (non-pecuniary) considerations come into play when selecting schooling levels and careers. As discussed earlier, many Peruvian workers are led to sub-optimal investments in technical and professional qualifications.

70. The generalized perception in Peru and elsewhere is that too often individuals invest in the “wrong” types of skills and careers. Too many go into saturated professions (law, communication, pedagogy)—and end up driving taxis—while rates of return to other skills and careers (e.g., engineering, technicians) are very high. This begs the question of whether individuals have adequate information and means to wisely select and pursue a course of study and type of skill investment.

71. Yamada (2006) argues that significant deficiencies in the functioning of Peruvian education and labor markets—particularly the lack of information on the returns to different careers, vocational training and institutions, and of reliable signaling and quality assurance—lead to significant mismatches between individual and family investments in tertiary education (excessive people entering dead-end careers and trades or low quality institutions) and the demands in the labor market.

72. Alternatively it could be that individuals know which are the careers, trades and institutions that offer the highest pay-offs but their choices are constrained by available funding, limited number of places and the matching of scholastic requirements to their innate abilities and

occupational tastes. Low income workers may end up in the less technical courses or weaker programs because these are cheaper or even free, and also are academically less demanding.

73. Tables 3-5 present new evidence to understand the nature and reasons for the underlying mismatches. The data suggests that information failures in the tertiary education market—affecting families, providers, and firms—preclude career and provider choices informed by sound cost-benefit analysis. The results are for the sample of the college-educated urban working-age populations. The conclusions are qualitatively similar for those who pursue technical education.

74. The last row of Table 3 shows that an overwhelming majority of urban working-age college-educated Peruvians (78%) chose their careers primarily based on their “vocation”, meaning individual tastes and preferences.⁵⁷ Only 13% opted for a specific career based on its employment outlook. The numbers for the case of Pedagogy are rather revealing (this career is the most demanded but the worst paid by the market). Roughly 87% of those who picked an education career cite vocation as the primary reason, and only 4% relied mainly on the employment outlook. In contrast, 21% of those who chose Engineering were driven by employment prospects, still 69% were led by vocational reasons. Note that financial constraints are not a dominant factor in career choice.

Table 3: Main reason for career choice of tertiary educated Urban Population,

	Vocation	Employment prospects	Financial constraints	Other	Total
CAREERS UNIVERSITIES					
Pedagogy	87.3	4.2	0.1	8.4	100
Engineering	69.2	21.4	0.4	9.1	100
Economics	73.4	17.5	0.5	8.6	100
Other health careers	80.1	8.4	0.0	11.6	100
Humanities and social sciences	81.0	7.0	0.0	12.1	100
Law	85.4	8.7	0.9	5.0	100
Medicine	88.9	8.0	0.0	3.1	100
Total- University	77.7	13.1	0.3	8.9	100
CAREERS INSTITUTES					
Computing	55.9	20.8	0.0	23.3	100
Health related	72.6	7.1	0.0	20.3	100
Pedagogy	78.0	5.3	0.0	16.7	100
Business and secretary	53.6	20.2	0.0	26.2	100
Technical	56.6	21.2	1.1	21.2	100
Tourism	71.5	18.8	0.0	9.7	100
Art	64.7	7.7	0.0	27.6	100
Total - Institute	62.8	15.3	0.2	21.7	100

57. The answers to the survey’s specific question were spontaneous, so it seems highly plausible that the word “vocation” in this case was closely related to individual tastes and preferences.

Source: Castro, Yamada, and Arias (2010) based on World Bank. ENHAB 2009-2010.

75. Does this data mean that Peruvian youngsters are naive or shortsighted when taking this skills investment decision so crucial for their adult life? While tastes are a legitimate important consideration in career choices, the evidence in Table 4 suggests that many high-school graduates in Peru lack enough reliable information on labor market prospects when deciding what career to study. The Table presents data on the degree of satisfaction with college and career choices based on whether the individual would change the election of career or university if he or she were to choose again (under similar conditions but with knowledge acquired). Two thirds of the college-educated seem satisfied with their higher education choices, since they would choose again the same career and the same university. Roughly 1 out of 3 would choose a different career or university, 5% would prefer to join the labor market after high school completion, and a handful would rather pursue technical education. Those who pursued Engineering, Economics and Other Health Related Careers have the lowest satisfaction index—disaggregation of the data shows that primarily they would choose to pursue them again in a different university.

Table 4: Potential new career choices for tertiary educated, Urban Population

	Same career		Other career		University instead of institute	Work
	Same institution	Other institution	Same institution	Other institution		
CAREERS UNIVERSITIES						
Pedagogy	57.2	10.7	9.4	15.0	0.0	7.6
Engineering	51.3	8.4	14.3	18.3	2.4	5.3
Economics	37.5	23.1	16.7	17.1	2.1	3.5
Other health careers	33.8	16.8	24.5	8.9	3.7	12.4
Humanities and social sciences	52.7	17.3	7.5	21.7	0.0	0.9
Law	64.3	19.5	3.0	11.6	0.0	1.6
Medicine	50.5	39.2	10.4	0.0	0.0	0.0
Total- University	50.0	15.2	12.7	15.6	1.3	5.2
CAREERS INSTITUTES						
Computing	24.6	8.9	12.0	14.6	34.9	5.0
Health related	22.7	14.2	6.7	11.4	42.8	2.2
Pedagogy	30.7	2.4	0.8	6.6	52.7	6.8
Business and secretary	25.8	14.1	2.0	16.6	40.8	0.8
Technical	27.6	8.2	8.1	19.9	32.3	3.8
Tourism	11.3	20.6	3.5	3.4	59.5	1.7
Art	27.4	18.2	5.9	41.9	6.5	0.0
Total - Institute	26.2	9.6	5.7	13.2	41.5	3.7

Source: Castro, Yamada, and Arias (2010) based on World Bank. ENHAB 2009-2010.

76. Similar analysis for a sample of individuals age 22-30 with completed higher education (both college and technical) by type of institution and disaggregated geographical domain is revealing. Only 16% (22%) of those who studied a technical career in a public (private) institute in Lima would choose the same career and institution. The majority of individuals who pursued technical careers in an institute regrets some element of their choice and would rather have pursued a university education. Close to half of young college professionals regret their choice of career or institution. Remarkably, more than half of the young professionals in Lima that studied in a private university regret their career choice but not their choice of institution.

77. Finally, Table 5 highlights that a consequence of inadequately informed decisions of type of education, career or institution is to have persistent problems of labor market insertion after completing the professional degree. Three out of every four professionals believe university education improved their labor opportunities (since they would be worse or much worse had they not studied the chosen career). However, roughly 2 out of 10 considered their university studies had no impact on their employment prospects. Among those who pursue technical education this fraction is 26%. The perceived null returns to higher education are more frequent among those in Humanities, Social Sciences, and Medicine. The situation is just more marked for technical institutes. These cases could be considered a waste of resources (time, direct costs and opportunity costs) for families and the society as a whole.

Table 5: Perceived Labor Opportunities without having studied the chosen career

	Worse or much worse	Same or even better	Other	Total
CAREERS UNIVERSITIES				
Pedagogy	77.6	16.9	5.5	100
Engineering	76.2	18.7	5.2	100
Economics	78.8	18.9	2.4	100
Other health careers	71.8	26.2	2.0	100
Humanities and social sciences	71.9	28.1	0.0	100
Law	90.2	8.8	1.0	100
Medicine	70.9	29.1	0.0	100
Total- University	77.1	19.3	3.5	100
CAREERS INSTITUTES				
Computing	68.4	26.1	5.4	100
Health related	61.9	30.3	7.8	100
Pedagogy	67.0	26.0	7.0	100
Business and secretary	66.4	23.9	9.8	100
Technical	77.4	17.1	5.5	100
Tourism	55.9	30.8	13.3	100
Art	46.9	38.3	14.8	100
Total - Institute	66.8	25.4	7.8	100

Source: Castro, Yamada, and Arias (2010) based on World Bank. ENHAB 2009-2010.

78. Then there is the question of to what extent firms themselves are sufficiently investing on training -- including soft skills – if the returns are presumably high. Existing estimates are wide ranging, but when a reasonable criteria for what is training is used only a small percentage of firms train their workers.⁵⁸ This may be related to appropriability problems, the lack of minimum workers skills for training to yield impacts, or hindered technological adoption and competition.

Box 3: Qualitative Evidence on the link between the demand and supply of skills in training markets

The qualitative study of SASE (2009) (see Box 1) also examined the link between labor demand and training offers from the perspective of the various stakeholders involved in the Peruvian labor training market. One of the main problems encountered is the lack of link between job training centers (CETPROS), technical institutes (IST) and universities and the demand for labor, mainly due to vocational training institutions choosing specialties and/or careers that depend on what the people want to study and not necessarily on what the labor market requires. This problem is evident in the reduced feedback of employers to the training curricula of these centers, few teachers with experience in the business world, and a lack of agreements between enterprises and training institutions so that students can make their first employment practices and/or work. There are different factors both in the supply of training (centers and vocational training institutes) and demand (enterprises) that contribute to this problem.

"What the CETPROS offer as specialties is not suited to the environment; for example, cosmetology and hair dressing is not demanded in the city. They should teach careers to revive the economy of the area, such as handicrafts, textile, fur and tannery" (Citizen Association Manager - Huancavelica)

On the supply side, the study identifies attitudes, skills, organizational and resources problems. First, there is little incentive to align the careers with the needs of companies. Second, there are weak capacities for market research or occupational analysis to sell the service of job training. Regarding the organizational factors, few centers have a promoter responsible for closer ties with the business sector. Finally, some institutions do not offer those specializations with increased labor demand because it is very expensive to do so (in terms of infrastructure, equipment, technology, pedagogic requirements). This is consistent with the perception of entrepreneurs that most institutions provides a low-quality training and very theoretical, both in CETPROS, IST, and even universities, whether public or private.

"The CETPROS and IST don't do their curricula according to local needs, they are outdated, teachers do not have experience, do not offer internships to students neither student exchanges" (consultant for industrial company - Huamanga)

On the demand side (enterprises) the study reveals that some employers demand only unskilled labor or privilege work experience over education/training, so they do not see a need to link with vocational training institutions. Some entrepreneurs recognize the importance of such a link, but have little incentive to engage given the negative perception of the quality of CETPROS, IST and many universities. Directors of training institutions complain that there are also "shortsighted companies that prioritize the evolution of it sales and profits in the short term", and do not prioritize the training of their workers.

"Theoretically, businesses must be involved in developing the study plan, but it is not because they don't want to, they cited lack of time, they have no quick profit" (IST Director - Trujillo).

Source: Based on SASE (2009).

⁵⁸ Chacaltana (2009).

79. The qualitative study, based on structured interviews of employers and tertiary education providers (Box 3), confirm that part of the explanation for the findings above is that information and regulatory failures lead to a misalignment between what training institutions provide and the skills employers need. With some exceptions, technical training institutions are little credible for the employers. The traditional training modules developed in Peru in the 1960s quickly lose relevance in the flexible and innovative economies of the new century.⁵⁹ Moreover, there is a big gap in workers' understanding of the types of skills development and training most valued by the market.

80. Individuals and families factor in the promise of the bigger payoff to higher education in their education investment decisions, and they should be provided with timely and relevant information on market returns to various career paths and on the characteristics of the supply of programs with some minimum quality assurance. As discussed below, the same is true for available employment opportunities, and capacity to demonstrate skills to employers.

⁵⁹ CEPAL (2004).

VI. BRINGING SKILLS TO THE MARKET: THE JOB SEARCH AND SKILLS SIGNALING PROCESS

81. Even when workers have the minimum skills employers seek, they may still be unable to tap them into a suitable job due to difficulties to learn about job vacancies or to demonstrate their skills to employers. Finding a job is itself a learned skill. It requires that workers know where openings exist, how to search for work, and to present their qualifications in a way that convinces the employer. The study examined the hypothesis that information gaps in this process hinder efficient and equitable job matching in urban Peru, and to what extent there is a role for public policy. The findings are discussed below divided into two parts: matching methods and signaling problems.

Half of Peruvian workers find jobs through “word of mouth”; the associated social networks appear to be as effective as available formal job search mechanisms in securing suitable jobs.

82. Information is fundamental to job search. Good information about where the jobs should lead to a more efficient job search process. However, it is not a priori clear which are the most effective mechanisms to provide that information. These include formal methods (e.g., employment agencies, newspaper and web adds), direct contact with employers (e.g., sending CV, visiting firms) and informal social networks which include the so called “strong ties” (relatives and close friends) and “weak ties” (e.g., distant relationships such as workmates).⁶⁰ The current dominant wisdom in the economic literature is that job seekers that use informal referrals experience better employment transitions, but there is not yet consensus on the quality of the resulting job matching (See Box 5). Moreover, weak ties dominate strong ties in terms of better job transitions, but again not always so for wages. This evidence has questioned the efficacy of public employment services in OECD countries and has pressed for the need to strengthen the usefulness of labor market intermediation and information-brokerage agencies.⁶¹

83. Despite the emerging interest in the development of labor intermediation services in developing countries, evidence of their relative efficacy is limited.⁶² There is also little understanding of what information gaps they should fill and of the preconditions for such services to be useful, particularly for the low-income population. These services may have a bigger role in countries like Peru characterized by high spatial and social inequality of opportunity. While informal job search methods can be relatively efficient, they may also lead to geographic disequilibria in the allocation of labor and unequal access to job opportunities in the context of a spatially unbalanced growth pattern as experienced by Peru in recent years. There is anecdotal evidence that some regions with booming local economies are experiencing shortages of unskilled workers (e.g., construction workers, agricultural laborers) whom meanwhile quite often struggled to secure jobs in other parts of the country. Also, several studies by Peruvian

⁶⁰ This terminology comes from the early work of Granovetter (1973).

⁶¹ The U.S. literature is more pessimistic of the efficacy of the U.S. public employment service than British research.

⁶² For Latin America, Marquez and Ruiz-Tagle (2004) use a panel data set for Venezuela to show that the use of employment agencies improves the quality of job transitions.

researchers have shown that ethnicity and labor market connections play an important role in giving access to employment opportunities.⁶³

84. As in most developing countries, Peru's regular labor force surveys only collect data on job search methods for the unemployed. The ENHAB survey collected these data for the entire working-age population –both on search methods used for first employment and on those commonly used— together with data on individual assessments of which they have found to be most effective. Table 6 displays the relative frequency with which each method is reportedly used (Panel A) and the assessment of its effectiveness by workers across different individual characteristics (Panel B).

⁶³ The most innovative study is that of Saavedra, Torero and Ñopo (2004) who using a multidimensional measure of ethnicity (constructed from a specialized survey) find that among wage earners a substantial part of earnings differences between racial groups cannot be explained by differences in individual characteristics, but that this is not so among the self-employed.

Table 6: Most used against most effective job search activities (% workers' responses)

	Panel A. Most used job search method					Panel B. Most effective job search method (self-report)			
	Formal job search	Social networks	Direct contact	Self employed	Formal job search	Social networks	Direct contact	Self employed	
Age group									
14 - 25	16.6	53.0	25.1	5.3	12.6	57.5	24.0	5.9	
26 - 49	16.0	45.3	29.5	9.2	11.6	46.2	29.8	12.4	
50 and more	14.0	48.7	26.3	11.0	9.2	48.8	27.2	14.8	
Region of residence									
Rest Coast	8.6	47.3	33.7	10.4	3.8	44.8	37.7	13.7	
Lima	15.4	49.7	27.5	7.4	10.1	53.6	26.4	9.9	
Highlands	10.0	45.1	28.3	16.6	6.1	41.7	32.1	20.1	
Jungle	28.5	42.4	20.9	8.2	29.2	44.0	17.1	9.7	
Own education level									
Secondary incomplete or less	9.6	55.2	23.9	11.2	7.2	58.5	21.1	13.1	
Secondary complete	14.7	48.0	27.5	9.8	10.1	50.0	27.0	13.0	
Higher education (non university)	21.0	44.0	29.4	5.6	15.1	45.9	31.6	7.4	
Higher education (university)	22.1	39.4	33.2	5.3	18.5	35.1	38.3	8.1	
Father's education level									
Primary complete or less	13.0	49.3	27.3	10.4	9.3	51.8	25.5	13.4	
Secondary	17.3	48.3	26.5	7.9	12.8	50.8	25.9	10.5	
Higher education	21.0	43.2	31.4	4.4	14.8	42.5	36.8	5.9	
Labor status									
Self employed	11.5	45.3	21.9	21.2	7.8	45.1	16.0	31.1	
Formal worker	19.5	44.8	34.5	1.2	15.1	44.2	40.4	0.4	
Informal worker	11.7	51.0	31.7	5.6	8.2	53.5	32.7	5.6	
Others	11.8	59.1	21.8	7.2	9.5	65.7	17.9	6.9	
Unemployed	25.2	48.0	25.5	1.2	16.8	59.6	23.1	0.5	
Inactive	16.5	54.4	25.5	3.6	11.8	58.9	25.2	4.1	
Overall	15.7	47.8	27.8	8.6	11.4	49.6	27.8	11.2	

Source: Own estimates based on World Bank. ENHAB 2009-2010.

85. Focusing first on Panel A, as in most countries, job search in Peru's urban areas relies largely on informal mechanisms related to social networks. Almost half of the Peruvian working age regularly rely on relatives, friends and acquaintances to search for a job, three out of 10 contact employers directly, 15 percent use formal mechanisms, and the rest rely on self-employment or attempts to set up a business. Remarkably, there are not hugely important departures from this overall picture across various worker groups. This is consistent with the evidence (Sections 3 and 5) that recruitment processes for most firms (except the largest) are ad-hoc. There is little use of advertising or labor placement agencies (public or private), and instead employers rely on informal sources (networks, existing employees) to find new employees.

86. Noteworthy are the few differences across employment status as these are rarely available. The unemployed tend to rely more on formal job search methods than the employed or inactive population - so if anything, commonly available labor force data *underestimate* the importance of social networks for job search in the broad labor market. When they search, the currently inactive show a pattern similar than the unemployed except for somewhat more reliance on social networks. Among those currently employed, salaried workers use relatively more direct contact with employers, the self-employed rely significantly more on independent work, and unpaid family and domestic workers are the most reliant on social networks. Even among formal salaried workers the use of formal job search mechanisms (such as websites, newspaper announcements, private or public employment agencies) ranks in a distant third place (19.5%).

87. The most clear group differences, though albeit not large, arise across schooling and skill levels and family background (proxied by father's education). The reliance on formal mechanisms and direct contact with employers clearly increases with the education level of the worker (10% for those with at most some secondary education compared to 21% for those with tertiary education), at the expense of the use of social networks (which still are relied upon by four out of 10 of the college educated). A similar pattern follows by worker's overall cognitive and socio-emotional (Grit) skills and father's education, although differences are less marked. There are even fewer differences across age groups and regions, except that young workers rely somewhat more on social networks while older (50+) workers rely more on self-employment, and workers in the urban Jungle use twice as often formal mechanisms (probably reflecting the higher incidence of formal economic activities in the sampled area). The overall picture is a relatively homogeneous pattern of heavy reliance on informal job search.

88. Is there a need for policy intervention to improve job matching in Peru?. This requires understanding to what extent social networks are efficient and equitable search methods and why they are used over others. A first piece of evidence comes from how social networks correlate with transitions into the labor market. The ENHAB asked workers how long it took them to secure their first paid job and through which job search method.⁶⁴ A simple cross tabulation of responses is revealing. As in urban Peru, unemployment to employment transitions are quite short most workers get a job within the first few months of search. The data suggests that social networks allow the fastest first-job transitions: 8 out of 10 workers who relied on them got their first job in less than a month compared to 5 out of 10 for formal job mechanisms. Workers who

⁶⁴ The question was asked to the working-age population, regardless of current employment status, except those who reported not to have ever held a paid job. This time-to-first employment is a better indicator to assess job transitions as unemployment incidence and duration are relatively low in Peru.

got their first job through formal mechanisms and direct contact with employers are twice more likely than those relying on social networks to obtain it past 3 months.

89. These results immediately raise the question of whether the resulting job matches are of adequate quality. For this, the ENHAB data allows to examine workers' own assessments of which method works best and undertake regression analysis to identify whether different methods correlate with better performance in the labor market.

90. Table 6 (Panel B) sheds further evidence on the effectiveness of social networks compared to other methods for job search. Half of the working-age Peruvians report that social networks have worked best for them to secure employment, followed by the other methods in the same order of importance as they are reportedly used in practice. The comparisons between usage and reported effectiveness of the different methods show very little differences overall and across worker groups. If anything, social networks tend to be cited more frequently as the most effective method than the rate at which they are used by some workers (especially the unemployed). Table 7 shows the cross tab of responses to the questions on most used job search methods and the one considered to have worked best in the experience of each worker. The diagonal cells show a substantial overlap among answers which can be taken as indication that workers are generally satisfied with the method they most used. However, in all off diagonal cells, social networks rank as the most effective perceived method for job finding, especially for those who usually recur to formal job search mechanisms.

91. Workers were asked their opinion about the most important prerequisite for getting a job. Education was singled out first by the majority of respondents (54.7%). Labor experience ranked second with 25% of the answers. Somewhat surprisingly, only 8.9% of individuals indicated that relationships and contacts were the key factor for getting a job. However, this does not contradict the previous results on the importance of social networks for job search strategy. The emerging picture one gets is that education (quantity and quality) is crucial for qualifying for the post, but social networks (some of which can also be developed through the access to quality education) are key to facilitate information regarding and access to job openings.

92. When actual observed differences in labor market performance are considered, social networks appear to lead to job matches of comparable or even better quality (See Box 4). Labor earnings of workers of similar individual and socio-demographic characteristics but that differ in their perceptions of the effectiveness of job search methods show no systematic differences. Moreover, a similar analysis comparing the reported satisfaction of workers with various aspects of their current job show no systematic differences across workers that prefer different job search methods, if anything social networks correlate with higher satisfaction in a few non-monetary dimensions.

Box 4: Assessing the quality of job matches from various job search strategies

Do the jobs acquired through informal networks lead to better quality of job matches, say in terms of higher or lower wages or more job satisfaction, compared to jobs found via formal methods, considering unobserved worker heterogeneity?. The ENHAB collected data that allows addressing this question by assessing systematically the relationship between workers' predilection for different job search methods and the quality of job matches. Following the literature, this is done through two separate regression analyses. First, a Mincerian earnings regression like the one reported in Section 3 is ran augmented with dummy variables for the type of job search method perceived to work best by each worker. Second, a series of probit regressions are ran using the same empirical specifications using as a dependent variable whether or not the worker is satisfied with their current employment overall and across a comprehensive list of job dimensions, namely, the level of pay, number of hours worked, schedule flexibility, mobility prospects, labor benefits received (social security, health, etc), the match with their education/qualification, and physical conditions.

All regressions control for gender, ethnicity, region of residence, own and parental education, actual work experience, cognitive and socio-emotional skills. The job satisfaction regressions also include a proxy of a worker's employment aspirations –measured as the gap between his or her current income and the minimum income reportedly required to take another job (in the same city)— to control for the fact that workers' evaluations depend on their personal threshold or expectation on the various employment conditions.

The earnings regression coefficients for the job search dummies are all very close to 0. Thus, the various job search methods lead to similar earnings for observationally similar workers. The probit findings yielded positive correlations between the preference for social networks and satisfaction with all but one job dimension (odd ratios hovering 1.2-1.5, and 0.8 for benefits), but only satisfaction with schedule flexibility is statistically significant. Workers who report social networks to work best in their job search are 2.3 times more likely to be satisfied with the flexibility of hours in their current job compared with those who lean towards formal job search mechanisms. The same is true for direct contact with employers (1.7 times more likely satisfied) and self-employment (3.2 times more likely).

These findings are broadly consistent with studies (mostly in OECD countries) that have examined the efficiency of different job search mechanisms in terms of expediting the finding of a job with quality (as measured by the wage or job satisfaction). The literature on the process of job search is largely confined to OECD and other European countries, especially U.S. and British studies (see Addison and Portugal (2002) for a review). Although the evidence is somewhat mixed, a majority of studies point out that informal networks tend to be associated with higher reported job satisfaction, lower turnover rates, but do not have strong effects on wages (See Loury (2006), Calvó-Armengol and Jackson (2004), and Mouw (2002)).

The literature points out three problems which bear relevance to the new findings for Peru. First, the data do not allow to know exactly which method led to the observed job; most studies connect the reported use of job search methods to the performance in the current job. The analysis for Peru goes a step further as it uses the worker's preferred job search method, which arguably is more likely to be used more often and intensively. Second, as with all regressions using cross-sectional data to estimate policy impacts, the results cannot be ascribed a causal effect on job quality matches of using a specific search method since the latter is a choice variable of the worker and thus might be endogenous in the regressions. The common approach to address this endogeneity problem in a cross-section is to find an instrument, but credible instruments are not readily available in the ENHAB dataset. However, the analysis does include a wider set of control variables than commonly available in other studies/data sets that arguably reduce this potential endogeneity problem, in particular the various cognitive and socio-emotional skills (which typically are unmeasured) and family background (both father and mother's education). The relatively homogeneous pattern of reported use and preference for job search method also argues against selection issues being very important in this data set. In any case, to the extent that any other relevant unobserved factors correlate positively with earnings and job search method choice, the results of no inferior performance of social networks are likely to be robust to selection into job search methods. Finally, the data does not allow to examine how the quality of social networks (e.g., size, diversity and density) induces variations in job match quality. This question is of utmost importance, given its implications on equality of employment opportunities in a country like Peru, and deserves close attention of future analyses of this issue.

93. In sum, the findings do not lend much support to the hypothesis that limited access to effective job matching mechanisms constitutes a significant barrier to suitable employment, particularly for low-income families. The evidence does not make for a compelling case to significantly scale up job search through formal methods such as public employment agencies. However, the data does not allow to examine how the qualities of social networks (e.g., size, diversity and density, which are not measured) induce variations in job match quality. This question is of utmost importance given that the outreach and effectiveness of social networks of families with lower socio-economic status and less skilled workers could be quite limited with implications on equality of employment opportunities in a country like Peru. This issue deserves further analyses. The implications of the findings point to a role for *targeted* interventions to improve job search assistance, and are discussed in the final policy section.

Skill credentials are quite often required by employers, especially from the more educated workers and for the better quality jobs, and give access to better quality jobs.

94. Hiring and training a new worker is costly, and breaking that employment contract can be even more costly (particularly in the formal sector), so firms are cautious about new hires. To lower the potential costs of hiring a new worker, firms need ways to assess the skills of workers before they hire them. Schooling attainment is often taken as a first pass, composite proxy of the skills embodied in individuals. As discussed in Section 3, the productivity content of an individual's educational level depends on the actual skills (cognitive, socio-emotional, technical and professional) developed from infancy through early adulthood and in the workplace, which in turn depend on the quality of family and school formation and labor market experience. In more developed labor markets, a mix of worker's and institutions' credentials, certification by accredited skills formation institutions, skill certifications (especially if the skills were acquired informally), worker's evaluations (cognitive and soft skills tests, interviews), and/or reference checks are routinely considered to assess these various skills and determine which worker is right for the firm.

95. As many countries in LAC, Peru lacks a developed system for skills certification and quality accreditation of education and training institutions. This may lead to wrong matches and the associated costs of dismissal, time and resources wasted. The lack of a quality assurance system for educational and training institutions also leads to considerable variance in the quality of schooling and skills formation and thus poor credibility behind workers qualifications. The evidence presented before from surveys of small employers and interviews of larger firms suggests that they tend to distrust the available institutions and qualifications, relying heavily on reference checks from trusted sources (mainly family members, current employees or other firms) and the worker's prior labor experience.

96. The ENHAB collected data to more fully characterize the extent to which employers require skills credentials during the job search, the means generally used to assess skill levels, and the constraints urban workers face to obtain credentials for their qualifications. Table 7 presents the relative frequency of whether and how prospective employers ask workers to demonstrate their schooling, experience or qualification during the job search, across various worker groups. Nearly half of workers have had their skills credentials checked, and this is most prevalent among the more educated workers (19% for some secondary education or less compared to 79% for the college educated). Credentials checks vary somewhat by age: they are

required somewhat more from young adults (age 26-35) and least from older workers (50+). They are almost the rule for formal salaried workers, and much less frequent among family and domestic workers (22%) and the self-employed (25%). More than half of the unemployed have had skill credentials checked as have one third of inactive workers at the time of the survey.

Table 7: Employer requirements to demonstrate credentials (% workers' responses)

	Not required	Required	Requirement				
			Academic degree	Studies certificate	References	Test	Interview
Age group							
14 – 25	57.0	43.0	7.6	30.9	28.2	14.0	19.3
26 – 35	47.5	52.5	14.0	24.8	26.9	15.7	18.7
26 – 49	57.4	42.7	17.9	23.1	26.8	15.9	16.4
50 and more	61.8	38.2	14.7	22.9	29.0	15.1	18.4
Region of residence							
Rest Coast	60.2	39.8	20.2	24.1	26.6	10.9	18.2
Lima	56.4	43.7	11.4	23.8	27.3	16.9	20.6
Highlands	55.1	45.0	16.0	21.6	28.4	17.3	16.7
Jungle	46.0	54.0	14.5	32.4	28.7	13.7	10.7
Own education level							
Secondary incomp. <	81.3	18.8	3.9	25.9	45.4	8.1	16.7
Secondary complete	60.8	39.2	4.6	27.2	33.7	15.9	18.6
Tertiary (technical)	32.7	67.3	15.6	26.9	25.3	15.2	17.0
Tertiary (university)	21.5	78.5	21.4	22.4	20.3	16.7	19.2
Father's education level							
Primary complete <	65.4	34.6	12.2	25.3	32.5	13.4	16.6
Secondary	49.3	50.7	13.5	26.8	27.1	15.5	17.2
Higher education	32.4	67.6	16.1	23.7	21.5	17.7	21.0
Labor status							
Self employed	74.7	25.3	11.6	25.4	34.0	12.8	16.3
Formal worker	27.7	72.3	15.7	24.8	24.7	16.2	18.6
Informal worker	61.7	38.3	9.1	22.6	30.5	15.7	22.2
Others	77.9	22.1	2.8	28.8	52.0	0.0	16.5
Unemployed	48.1	51.9	10.5	28.1	30.7	13.1	17.6
Inactive	66.8	33.2	12.5	28.2	27.9	15.3	16.1
Total	55.6	44.4	13.8	25.3	27.5	15.3	18.1

Source: Own estimates based on World Bank. ENHAB 2009-2010. * includes Policy department report.

97. The most common worker-reported requirements that employers use to assess credentials are certificates of study and reference checks – personal and from previous employers- (each at 25% of the total), interviews (18%), and degree diplomas and employer-administered tests (each roughly 15%).⁶⁵ Consistent with previous evidence from the informal employers survey, for less educated (some secondary or less) and unskilled jobs reference checks are most important, which in this case include police reports, mentioned 5 and 10% of the times by the less educated and family workers/domestic employees, respectively. Workers with tertiary education are most often required to demonstrate education credentials, which are as often assessed through diplomas or certificates of study (a less demanding requirement). Reference checks share a relatively similar importance across all worker groups, although somewhat diminished among the college educated. There are also little differences across workers in the reported frequency of employers’ use of interviews and skills tests, except that the latter are required half as frequent from less educated workers (in fact, no family worker or domestic employee cited them). The qualitative data from students in training centers also corroborate these findings (Box 5). Altogether, these results corroborate the previously reported findings from small employer surveys, which demands from the segment of less skilled labor, pointing at their greater reliance on reference checks and own direct assessments of the worker’s skills through interviews.

Box 5: Qualitative Evidence on the job matching process

The qualitative study of SASE (2009) (see Box 1) also asked individuals about their experience in labor market insertion. According to students and workers interviewed, they have faced many difficulties to get a job. A first obstacle is that persons who decide to continue to higher education do not have adequate and timely information on the possibilities of employment if they choose certain specialty and on possibilities of finding a job if they study in a particular institution. A second limitation is the lack of demand for certain jobs and employers preference to hire recommended people or those who have studied in other cities. Another difficulty faced by applicants is to prove previous employment experience because companies usually do not provide certificates of prior work. Self-employment and migration to cities where there is greater choice of employment are alternatives considered by the majority of students and workers.

"I Chose the CETPRO by recommendations of an aunt who studied clothing there and the owner of the pension where I live" (CETPRO student – Trujillo)

"Large enterprises are demanding documented CV but small enterprises do not give certificates, then we don't have documents to signal our work experience" (Transport Company worker – Arequipa).

"The market is very closed, there are no employment opportunities." "Many professionals have to work independently because they don't have many options" (Bank worker – Huancavelica).

Source: Based on SASE (2009).

98. Do the findings so far warrant policy action to help workers obtain credentials for their qualifications?. Again, a strong case depends on the extent to which the lack of effective skills signaling mechanisms hinders workers’ ability to find a suitable job. For this, one should

⁶⁵ Workers could cite multiple means. The frequencies are calculated as percentages of the total cited means to gauge at their relative importance. An open-ended “others” category was merged into reference checks as it mainly captured police reports.

establish that, all other things equal, workers with more credible credentials do better in the labor market (e.g., enjoy higher earnings or job satisfaction) than those who lack them.

99. There are two related but distinct aspects to such analysis. First, whether a worker's observable or verifiable credentials (e.g., years of completed schooling, degree, institution attended) are actually regarded by the market as a reliable (however partial) signal of his or her multiple skills. Second, whether the worker is able to credibly demonstrate these credentials (i.e., proof of the schooling level or degree completed and institution attended).

100. On the first point, Section 3 already established the high variation in the returns for the various types of post-secondary schooling, linking it to the heterogeneity in the quality of tertiary institutions. A closer examination of rates of returns to various schooling levels can shed light on the importance assigned to credentials by the Peruvian labor market. This analysis has been done, quite comprehensively, by Peruvian researchers. Table 8 presents the most recent estimates of average returns to schooling in Peru that allow them to vary across years and levels of education for a more realistic representation of the payoffs to the education investment process⁶⁶. This shows the earnings premium as individuals move up each year of the education ladder from no schooling to university completion, and correspond to the per year returns to each grade. For the family of a child just starting school it answers "On average, what is the percentage change in earnings of completing grade A compared to the previous grade?".

101. The results show that the yearly returns are low and flat in the 11-year cycle of basic education, except for significant earnings premiums to degree completion, and rise significantly at the tertiary level, where again a college investment only matures fully with degree completion.⁶⁷ There are clear diploma or "sheepskin" effects, whereby much of the schooling earnings premium accrued to those completing a degree (e.g., secondary or university graduates). The return to each year of elementary and high school education hovers around 3.5-4% (resulting from contrasting average earnings differences between 5 and 1, and 10 and 7 years of completed schooling), but reaches 11% and 14% for just completing the last grade of elementary and secondary, respectively (e.g., those who complete secondary earn 14% more than those who drop out in the 10th grade). The return to the last year of college is a whopping 29%.

102. These results make it clear that the Peruvian labor market ascribes a significant (productivity) "signaling" value to degree completion.⁶⁸ This is consistent with the evidence of Table 7 that employers most require proof of schooling credentials for those completing at least high school and especially tertiary education. From families' perspective, the option value of their children completing secondary and going to the university is the main incentive to attend basic education in the first place.

⁶⁶ Yamada and Castro (2010) combine the regular household survey ENAHO data for 2005-2008 to obtain a larger dataset that allows more detailed estimation of returns to schooling using a variety of approaches, including internal rates of return analysis. The estimates in Table 8 are the whole country and come from a flexible non-parametric local linear regression that allows returns to vary by schooling grade and by individual's work experience.

⁶⁷ In a cross-country study, Arias, Diaz and Fazio (2006) found a similar pattern of convex returns and sheepskin effects across 10 LAC countries, including Peru. Sheepskin effects in the returns to schooling have been also documented in developed countries (see Card (2001)).

⁶⁸

Table 8: Returns to schooling show significant "diploma" effects

	Primary		Secondary		College complete/ Technical incomplete	College complete
	1 – 5	5-6	7-10	10-11	12-14	15-17
Yearly average increase in earnings	3.5%	10.9%	4.0%	14.1%	12.2%	29.2%

Source: Yamada and Castro (2010).

103. There is a long standing debate in the labor economic literature as to whether these diploma effects have a pure productivity or a signaling interpretation.⁶⁹ The systematic pattern and size of these earnings premium in Peru makes a pure school-related productivity story implausible – why would knowledge or skills acquired in the last grade matter so much more?. The evidence is more suggestive of strong selection or “cream skimming” by which those with higher cognitive or socio-emotional abilities are more likely to complete secondary and pursue tertiary education, as documented before for Peru.⁷⁰ Peruvian employers would then be justified in regarding these workers as more talented (productive) and regarding a diploma (credential) as a signal of their productivity. The reliability of this signal is, however, significantly weakened by the high variance in quality (academic rigor) in high school and post-secondary schooling and training. Many workers may choose to pursue a career in a weak, less demanding institution or program that gives them a certain status and provides some positive signaling in the labor market. Employers are therefore compelled to rely on other additional means (as shown in Table 7) to assess workers’ actual skills and qualifications. Moreover, the upshot is that many individuals could end-up doing jobs for which they were not trained, thus feeding into the mismatch of skills previously discussed.

104. Are workers able to readily acquire the means to credibly demonstrate their credentials?. ENHAB asked workers about whether they do in fact acquire schooling credentials and the reasons why they do not, for the most relevant case of tertiary education. Table 9 presents data on the percentage of tertiary educated workers who got their diplomas by career. Three out of ten college graduates fail to obtain their bachelor’s diploma while almost half of graduates from technical institutes did not get a diploma that certify their studies. This happens in roughly equal proportion either because they dropped out from school or for other reasons. Getting a bachelor’s diploma is more prevalent in careers that demand a professional license such as Medicine and Pedagogy (8 out 10 have it) where it makes more sense to invest the time, effort, and financial resources to get the formal degree. However, this appears to be less so for technical degrees in these fields, as 37 to 46% of these workers failed to get a diploma. Diplomas are less crucial in more practical professional careers such as Economics and Business (6 out 10 get it). Actually, diplomas are in principle also very important for practicing engineering and law, yet close to 3

⁶⁹ As illustrated in the job market signalling model of Nobel Prize winner Mike Spence.

⁷⁰ See Card (2001), Heckman and Rubinstein (2001), and Heckman and Carneiro (2003).

out of 10 workers in these careers did not get their diplomas. Finally, technical and tourism vocational careers show the highest rates of failure to get a diploma.

Table 9: Percentage of Students who obtained a Bachelor's Degree by Career

Career	Bachelor's Degree					Total
	Yes	No	No, I gave up studies	Do not remember	No answer	
Pedagogy	81.3%	7.2%	10.5%	0.5%	0.5%	100.0%
Humanities and Social Sciences	66.7%	11.8%	17.7%	0.0%	3.9%	100.0%
Economics and Business	58.5%	18.9%	20.7%	1.8%	0.0%	100.0%
Engineering and Physical Sciences	67.9%	16.3%	15.3%	0.5%	0.0%	100.0%
Medicine	83.3%	5.6%	11.1%	0.0%	0.0%	100.0%
Other Health Related Careers	68.0%	20.0%	12.0%	0.0%	0.0%	100.0%
Law	67.4%	17.4%	13.0%	0.0%	2.2%	100.0%
Total	69.9%	14.2%	14.7%	0.7%	0.5%	100.0%

Source: World Bank. ENHAB 2009-2010.

105. Table 10 further reveals that the main reported reasons for not obtaining official diplomas (among those who answered “No” in Table 9) are pretty similar broadly for technical and professional careers. The most important is the failure to meet academic requirements (40%) – such as courses, final examinations, thesis— followed by the inability to afford the cost of obtaining it (21%) and the burdensome process involved (18%). This confirms anecdotal evidence that many workers often face serious constraints to demonstrate their formal schooling and skills already acquired due to the high monetary and non-pecuniary costs of obtaining the relevant diploma or certification. This appears particularly more important among some careers. In fact, even some public schools often charge a fee to individuals in order to issue a high school diploma, which adds to the significant time and transaction costs involved.

106. So, do the workers who are able and decide to acquire credible credentials do better in the labor market?. The information collected in the ENHAB is used to quantitatively investigate this question in two ways. First, workers (of all education levels) who reported to have a way to demonstrate their skills to employers⁷¹ were compared (through regression analysis), in terms of

⁷¹ In one question of the ENHAB, all workers are asked if they have a number of relevant resources to seek employment, such as qualifications, work experience, means to demonstrate qualifications, contacts, etc.

earnings and job satisfaction, with those who reported not having it, controlling for own schooling, generic skills, family background and all the characteristics included in the analysis behind Table 3. Second, a similar comparison is done within the sample of workers with tertiary education for whom more detailed data on the types of credentials (i.e., diploma vs. certificate) to gauge at differences arising from the quality of the signal, although at the cost of a significantly smaller sample size.⁷²

Table 10: Reasons for not obtaining a Bachelor's Degree by Career

Career	Failed to meet academic requirements	Lack of monetary resources	Process was too complicated, time consuming	Still studying, preparing dissertation	Other	Total
Pedagogy	35.7%	28.6%	21.4%	14.3%	0.0%	100.0%
Humanities and Social Sciences	40.0%	0.0%	0.0%	40.0%	20.0%	100.0%
Economics and Business	38.5%	30.8%	7.7%	15.4%	7.7%	100.0%
Engineering and Physical Sciences	50.0%	7.1%	21.4%	10.7%	10.7%	100.0%
Medicine	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Other Health Related Careers	20.0%	26.7%	26.7%	13.3%	13.3%	100.0%
Law	28.6%	14.3%	28.6%	28.6%	0.0%	100.0%
Total	37.5%	20.8%	17.7%	15.6%	8.3%	100.0%

Source: World Bank. ENHAB 2009-2010.

107. The results are strongly suggestive of a positive impact of credentials on securing better quality employment. The return to having a credential is about 10 percent in the general sample, although the estimate is at the border of statistical significance, and a robust 26 percent in the higher education educated sample. Workers with credentials are 1.8 to 3 times more likely to be satisfied with their job in the general and tertiary sample, respectively, although for the latter the result holds only for workers with a diploma and not those with certificates (as expected). This higher satisfaction holds for almost all dimensions of employment, except for incomes in the college sample (odds 1.6 higher but statistically insignificant) and hours flexibility in both samples, while the stronger effects (odds 2 to 3) obtain on two dimensions of job quality: benefits and mobility prospects.⁷³

⁷² The ENHAB sample of workers with tertiary education with test skill measures is around 375 workers, which although small, nevertheless allows to establish statistically robust relationships.

⁷³ A concern with the analysis is the potential endogeneity arising from the fact that the acquisition of credentials is a worker's choice that may depend on idiosyncratic and other personal characteristics correlated with earnings

108. Is there then a good case and room for policy interventions?. In light of the strong diploma effects and the striking consistency of the credential results, one can conclude that workers who face costly and bureaucratic constraints to acquire credentials for their completed secondary and post-secondary schooling are unjustifiably hindered in their ability to secure a job that best match their skills. As noted in Section 3, this is one of the dimensions which emerge weaker in workers' own assessments of their capacities to seek employment. Such constraints should be removed akin to efforts for simplifying and reducing the cost of registering a business, where Peru has made significant strides in recent years. The availability of better means to readily screen workers signals is likely to be valued also by employers.

109. This calls for policy efforts to strengthen the ability of workers to carry credible signals of their skills and latent productivity to the labor market. As discussed in the next final section of the report, there is a menu of policy tools to address this challenge.

potential. However, the fact that we control for a variety of socio-emotional and cognitive skills (which as shown do predict college attendance) and parental education makes it more plausible that the effect can be given a causal interpretation.

VII. CONCLUSIONS AND POLICY RECOMMENDATIONS

110. This study examines the barriers that hinder the insertion of low-income urban Peruvian workers into the labor market, by examining two simple questions: Do workers have the skills employers most value?, and, if so, do they have problems mapping them into suitable jobs?.

111. In tackling these questions, the study documents the multiplicity of skills employers want, the earnings returns to generic, technical and professional skills, the socio-economic gaps and market and policy failures in the formation of those skills, the means workers used to search for jobs and to demonstrate their skills to employers. The analyses, conducted by a Bank team and Peruvian researchers, use a variety of data sources, including primarily an innovative household survey developed specifically for this study –first of its kind in Latin America—. This survey measures cognitive and socio-emotional skills together with a rich dataset of labor market outcomes and family and individual characteristics.

112. The study provides evidence that **three factors are increasingly constraining the labor market insertion of workers**, especially from lower-income families, hindering their capacity to tap on new employment opportunities:

113. **The first, and most binding factor, is the lack of a core set of generic (cognitive and socio-emotional) skills, which are demanded by employers and highly valued by the labor market.** The ensuing skills gaps start very early in life due to inadequate nutrition and nurturing learning environments, and deficient quality of basic education (especially in rural areas) of disadvantaged families.

114. The report argues that the development of generic skills should be given a top priority in Peru's development strategy for three main reasons. First, they matter to employability as Peruvian employers consistently manifest that these are the skills they most want but find hard to get and in turn the labor market places a high value on them. Second, they matter to the long-term growth of the economy. Third, they matter to social mobility as there are significant gaps in these skills between Peruvians from better off and worse off families, and they correlate with educational achievement, including the pursue of a college education. Both cognitive and socio-emotional skills have been shown to also positively impact other important social outcomes in OECD countries such as crime, substance abuse, teen pregnancy, and health (e.g., obesity). They are thus essential for improving the quality of life of all Peruvians, in terms of long-term income potential, better health, more engaged citizenship, and ultimately more happiness.

115. The evidence confirms that the development of technical skills is only a small part of the solution to the human capital gap in Peru. A high school graduate well-equipped with generic skills can best take advantage of opportunities for acquiring technical and job-specific skills later in life, whether on-the-job or through formal tertiary education and training.

116. **The second in importance is the presence of information failures in the post-secondary skills formation process, which lead many young Peruvians to sub-optimal investments.** These in turn are related to deficiencies in the provision and the regulatory framework of tertiary education and training services.

117. The high average returns to higher education mask wide variation across different types of post-secondary education, institutions, careers, and across workers. Tertiary non-university education and some college careers show returns that are not very attractive, and even negative when direct costs are factored in. There is also considerable variation in the returns to training programs. The returns to firm-based training programs, and increasingly those offered by universities, are higher than those of the main technical skills formation institutions. Likewise the returns to large publicly funded technical training on employment and wages are low or zero.

118. These conform with the generalized perception in Peru that training institutions have outdated curricula, divorced from market needs, and that too often individuals invest in the "wrong" types of skills and careers. In fact, the new survey evidence shows that 8 out of 10 urban college-educated Peruvians chose their careers primarily based on their "vocation". Only 13% chose it based on its employment outlook. When asked many graduates from technical institutions and professionals regret their choice of career and/or institution of study.

119. The study argues that information failures in the tertiary education and training markets – affecting families, providers, and firms— preclude career and provider choices informed by sound cost-benefit analysis. The lack of reliable signaling and quality assurance leads to significant mismatches between individual and family investments in tertiary education and the demands of the labor market.

120. **The final factor is the existence of information failures in the job matching process, which prevent workers to demonstrate their skills to potential employers.** These are in turn related to barriers to obtain credible schooling credentials and inadequate mechanisms for skills certification and post-secondary accreditation.

121. Although the mechanisms to match workers to available vacancies in Peru are not well developed, this does not seem to be a binding barrier to employment of low income workers. About half of Peruvian workers find jobs through "word of mouth" (i.e., rely on social networks of relatives, friends and acquaintances), consistent with data showing that employers tend to rely on informal networks and mechanisms to find suitable workers. Social networks rank as the most effective perceived method for job finding according to workers' perceptions, including those who usually recur to formal job search mechanisms. Moreover, social networks seem to lead to jobs of quality (measured by earnings and satisfaction on several job dimensions) comparable to that of formal search methods.

122. On the contrary, new evidence indicates that low-income workers tend to lack the means to demonstrate their skills to employers and this hinders their employment prospects. Skill credentials are quite often required by employers, especially from the more educated workers and for the better quality jobs. The most common worker-reported requirements of credentials are certificates of study and reference checks. Three out of ten college graduates fail to obtain their bachelor's diploma while almost half of graduates from technical institutes did not get it. In half the cases the reasons are involuntary, due to high cost of obtaining it and/or a burdensome process. There is strong evidence indicative that the lack of credentials implies a significant barrier to better quality employment, both in terms of earnings and satisfaction with a host of dimensions of employment.

123. Tackling these problems calls for a policy framework that goes beyond narrow and fragmented educational, training and labor policies and integrates them into a long term skills development strategy that—starting from investments in early-childhood development of poor children—strengthen degree completion and schooling transitions, improve education quality, and the functioning of training and labor markets.

124. This spans a wide ranging policy agenda. Below we primarily focus on the policies more directly implied from the analyses. The Appendix A contains more specific recommendations on these areas grounded on a diagnostic of the advances, current situation and potential of specific programs in Peru. The reader is urged to consult Policy Notes prepared by the Bank focused on basic and tertiary education, safety nets, health, and social services accountability for more detailed discussion. These Thematic Notes discuss the specific problems being addressed, conditions for success, and references to lessons on design and implementation issues from around the LAC region and beyond.

The **three main strategic policy directions with some selective actions** that follow more directly from the findings of this study are:

First, prioritize programs and policies that give low-income children a level playing field to acquire school-readiness, and support to schools for the development of basic cognitive and socio-emotional skills.

Policy makers are urged to prioritize public resources and efforts towards the development of generic skills –cognitive and socio-emotional— through critical investments and interventions during the sensitive periods of a person’s life when these skills are more malleable through cost-effective public intervention. Policies and programs ought to ensure an adequate maternal and child health and nutrition foremost in the first 1,000 days of life since conception, an enriching learning environment during ages 2-6, and quality basic education that develops both cognitive and socio-emotional skills through adolescence. Given the long maturity of these investments, a social pact for boosting a sustained investment in early childhood can provide a foundation for political sustainability as has been stressed by the Pact for Investment in Early Childhood (*Inversion por la Primera Infancia*, 2010) which gathers the support of diverse segments of Peruvian society, including political actors, business, academics, opinion makers.

Three key policy goals are: (i) eradicate child malnutrition; (ii) foster adequate early-childhood skills development in the first 5 years of children’s lives, and (iii) solidify basic generic skills development in the basic education cycle.

This can be accomplished through the strengthening of recent policy efforts: (i) improve the management and operational capacity of *Juntos*, the country’s Conditional Cash Transfer (CCT) program, expanding its coverage to include eligible but currently excluded poor families, and matching it to an adequately expanded supply of nutrition and health services; (ii) Ensuring access to quality basic health and nutrition services, by closing the gaps in human and other resources of health centers through performance-based financing, improved management and better accountability, building on the nutrition strategic program (*Programa Articulado Nutricional -PAN*) (iii) Ensuring an adequate supply of Early Childhood Development services, filling the gaps in coverage of poor children age 0-2 (from *Juntos* families), and continuing the recent rapid expansion of access to pre-school (age 3-5), with adequate provisions to ensure their quality; (iv) improve the quality and closing remaining access gaps in basic education.

Families and communities have of course a central role in the development of generic skills of their children. Public policy can support their role by providing low-income parents with information on nurturing parenting practices, through existing programs (like Juntos), services (counseling in health centers), and schools (through their involvement in community participation).

Schools also have a fundamental role to play. A broader reform impetus is needed, as encompassed in the National Educational Plan (*Proyecto Educativo Nacional –PEN*), to address the main problems affecting basic education in Peru. The PEN and other studies, including a recent Bank policy note, outlines clearly the main actions and challenges on several fronts, particularly: (a) institutional arrangements—clarifying mandates and roles in the sector—and management—through timely information—of the education system at the central, regional and local level, including empowering schools to exercise an effective role in local management and decision making; (b) pedagogic support, teacher training and evaluation, and roll out of the enhanced incentives to attract and retain effective teachers established by the new teacher public career law; (c) school infrastructure, equipment and pedagogic material; (d) moving to capita financing grounded on strong accountability systems. Specific actions are summarized in an appendix to this report.

The study's findings urge to ensure that pre-school and basic education curricula and pedagogic practice pays adequate attention to the critical development of socio-emotional skills. For instance, a critical skill developed during the pre-school years is self-regulation—the ability to regulate emotions and reactions to stimulus, and focus and sustain attention— which has been to shown to predict all sorts of socio-economic and life outcomes, as importantly as cognitive ability. There are feasible approaches that have been proven effective to develop this critical skill. As Peru is in the middle of the process of expanding pre-school coverage, it would be advisable to ensure that these skills do not get squeezed out by a focus on “academic” skills.

Also, in some schools of Peru, particularly rural areas, some forms of “spanking” or “whipping” are still commonly used (often with parents’ consent) as a means of disciplining students. Violence and bullying is an increasing concern in secondary schools, especially in marginal urban areas. These can have known detrimental effects on children and adolescents’ academic motivation, self-esteem, and capacity to develop healthy interpersonal relationships, increasing the risk of drop out and carrying over to the workplace. Proven interventions in several countries exist that can provide teachers, parents and students with support to develop skills to manage and probe alternative resolution of conflict, from which lessons can be extracted to the Peruvian context.

While their importance has been long recognized by educators, socio-emotional skills have remained relatively marginal in the core reforms of educational policy in Peru. They should be attended when it comes to passing laws, setting learning targets or training teachers. The development of standards and capacities to assess learning in both cognitive and socio-emotional dimensions in culturally sensitive ways is a pending task. The experience with related reforms and interventions in the world can offer useful lessons, such as recent innovations in the U.S., U.K., Australia and Colombia.

Second, reduce the wide variation in quality of tertiary education and support the expansion of access, to strengthen the full “value option” of skills investments and making links to innovation.

Individuals and families factor in the promise of the bigger payoff to higher education in their education investment decisions, and they should be provided with timely and relevant information on market returns to various career paths and on the characteristics of the supply of programs with some minimum quality assurance. Peru is lagging behind several countries in the region (e.g., Brazil, Argentina, Colombia, Chile) which have achieved important improvements in the relevance, efficiency and quality of the tertiary education system by improving the governance and independent oversight of the sector on the basis of voluntary but incentivized accreditation. There are also known externalities of technical and professional skills to technological innovation, which can be tapped with deliberate policies.

The primary focus can be on accelerating recent reforms in Peru to: (i) develop the regulatory and quality assurance (accreditation) framework in education through the consolidation of the SINEACE (*Sistema Nacional para la Evaluación, Acreditación y Certificación de la Calidad Educativa*) agencies for basic education, university and non-university tertiary education; (ii) establish reliable mechanisms (labor market observatory and more integrated employment service) to communicate regular information about the quality and returns of higher education programs and the most demanded skills. Several countries have established labor market observatories (such as Chile and Colombia) and employment services to inform both career choice, training investments and facilitate job search, from which lessons can be drawn.

With a more developed quality assurance function in place, additional measures that would help in this area include: (iii) increasing equity in enrollment by expanding student finance (loans, scholarships) to support qualified students (with adequate generic skills) attend different types of tertiary institutions, based on needs, merits and tied to accredited institutions. Peru could benefit from lessons of innovative loan programs in the region (such as Chile’s Preferential School Subsidy, CAE, and Colombia’s ICETEX); and, (iv) fostering links between firms and universities locally and abroad with respect to R&D, knowledge sharing and research networks.

Third, address technical or job specific skills gaps of youth and adults using selective interventions, including incentives for firm training, public financing with private provision, and targeted programs.

The international evidence on life-long learning and training interventions for workers who leave school before completing basic education shows a mixed track record, ranging from programs (vocational, or publicly provided training) producing very limited impact to privately-provided youth training programs shown to have important returns. The international experience suggests that an adequate training system for less educated workers relies on a variety of policies and mechanisms suited to a heterogeneous workforce.

One key policy is creating the right incentives for firms to train their workers, as public funding is unlikely to ensure a stable and adequate level of financing. In early 2010, Peru enacted a new law to incentivize firm training by allowing a tax exemption of applicable training

expenses up to a maximum of 5% of total tax expenditure deductions of the firm in the year. The law just became effective this year.

These types of schemes have proven effective to increase firm training in several countries, although a few pre-requisite elements are common to successful schemes: (i) keeping an effective, simple mechanism for administering tax exemptions through the tax system since complicated rules lead to employer noncompliance; (ii) ensuring training is relevant to market needs by allowing proceeds to be used for in-service training or to purchase training at an accredited (eventually by SINEACE) training institution. It is also advisable to evaluate implementation of the law and its operational mechanisms in order to discern the need for adjustments in its implementation over time. With the right incentives, firm training is likely to address the needs of job-specific training. A successful experience from which lessons can be drawn in Peru is the National Service for Industrial Labor Training (SENATI) which is funded through industrial firms' contributions and has achieved international certification and a positive performance in placing graduates in the labor market.

Firm training is less likely to cover general training, for example, on socio-emotional skills. Moreover, less experienced and educated workers and small employers tend to benefit substantially less from these schemes, which leaves at least 50% of workers excluded.

To address this gap, Peru can consider expanding the scope of the Pro-Joven youth employment program to strengthen a core set of technical and socio-emotional skills and cover a higher share of low-income youth. This program has a proven track record of providing valued combine class-room and workplace training to about 70 thousand youth over little more than a decade. This, however, is only a fraction of the potentially eligible population. Recent developments in similar programs incorporate training components on behavioral (socio-emotional) skills – besides technical, basic cognitive or specific trades – given their malleability through early adulthood and their importance in the labor market. Interestingly, these elements were originally intended to be more prominent in the first design of Projoven. This could be complemented with features of mentoring programs as there is evidence that youth participants develop socio-emotional skills from participation. These programs are quite rare and of limited scope in Peru and elsewhere in the region.

These and other specific actions can contribute to address the market and institutional failures affecting skills formation and labor market insertion. Sustained growth can be enhanced by improving the efficiency of skills formation and better matching of workers to suitable jobs. This also lays out a more solid basis to develop social protection programs that are compatible with strong work incentives and sustained productivity growth. We conclude with a brief reflection on three issues that affect the potential impact and political feasibility of these policy reforms.

Investing now: the demographic window of opportunity vs. political horizons

125. First, skills formation is an extremely time-dependent process. For families and societies unable to do it at the right time, gone is the opportunity. A decade or more goes by before any schooling bequests to young children can lift up family incomes and contribute to growth.

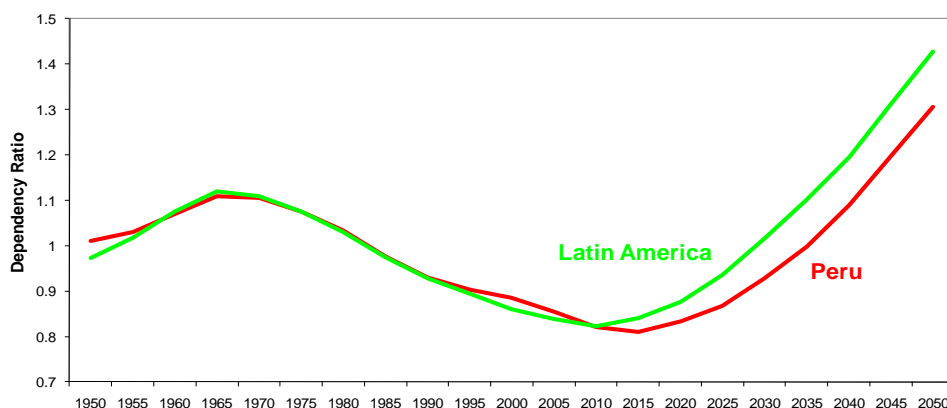
History indicates that under current national progression rates it may take around two decades to erase the schooling gaps between the poor and non-poor in Peru.⁷⁴

126. Demographic forces offer Peru a unique opportunity to translate the human capital accumulation of young cohorts into a more productive labor force.⁷⁵ Peru just entered the demographic transition stage where the "dependency ratio" (the fraction of the population who is too young or too old to work) is declining (Figure 8). As Peru goes through this transition, labor force participation is expected to rise for the next two decades. As the share of younger cohorts in the working age population will rise faster, older and poorly skilled workers can be replaced with younger workers at a faster pace. Peru still has a decade or so to take advantage of this.

127. The fall in fertility is favorable to this process. Families are having fewer children, and women are increasingly joining the labor market. This means more resources and lower costs to invest in quality learning environments and schooling for children. This is a gradual transition and it would take more than a decade for skill investments to translate into a more productive labor force and improvements in national and family incomes. In Peru, the demographic window of opportunity is closing; the time to invest is now.

Figure 8: The demographic transition and human capital accumulation, an opportunity that Peru should not miss

Window of Opportunity (Dependency ratio)
c- Peru and Latin America



Note: Dependency ratio = (population age 65 and older or 15 and under)/population age 15 to 64.

Source: Arias, Diaz and Fazio (2006) based on IDB (2003) and World Bank (2006).

128. Second, there are of course clear fiscal implications and trade-offs for the above policy options. While there is still room to improve the efficiency of social expenditures in Peru, the country currently under spend at such level that there are limits to what can be achieved with pure efficiency gains, without higher social expenditures to implement the relevant policies and programs. As the economy continues to grow fast, there is a less pressing need for increasing the

74. As reported in De Ferranti et al. (2003), EAP high performing countries increased their average schooling by less than 5 years between 1960 and 2000, compared to 2 to 3 years in most LAC countries during this period.

75. See IDB (2004) and World Bank (2010).

overall tax effort in the short-term, but this probably would be critical in the longer term. It is important to develop a sustainable increase in social expenditures which conforms to macro and fiscal considerations. Moreover, increases in spending should be devised with mechanisms to ensure they translate to better outcomes, such as setting targets, monitoring them, and allocating expenditures on the basis of unit costs of provision and progress towards set targets.

129. In any case, the competing use of resources and political capital requires setting spending and reform priorities. There are clearly trade-offs (in terms of fiscal resources and policy effort) in moving forward on all these (and other) fronts. For instance, in the case of education, the country already established a financing goal of 6% of GDP, the average level observed in OECD countries. Even within this goal, the expansion of say preschool provision needs to be reckoned with the efforts to improve the quality of basic education and the expansion of the coverage and quality of tertiary. In reality, policy makers tend to intervene at all levels of the education system, with different emphases, as early skill investments have better chances of maturing with improved access to higher grades by removing binding supply and demand constraints. In making marginal expenditure allocations, policy makers could gradually favor those investments that are most likely to remedy the bottlenecks and improve the incentives for families and firms to invest time and resources in skills formation. In practice, execution capacities and related resource constraints (e.g., availability and time to train new teachers) help balance out competing needs.

130. Finally, the best policies, in terms of a social cost-benefit calculation, are often not the most palatable for short political horizons or owing to political economy reasons. Decisions at health facilities, schools and in the health and educational system overall are mediated by many political considerations. It is important to understand these and trace out the kinds of coalitions and inter-temporal agreements that could favor the case of early childhood interventions and major reforms of the educational and health systems. Factoring in the positive spillovers of a labor force with the basic level of generic skills on technology innovation, productivity and growth, it is hard to overstate the critical importance of pushing a “skills for all” agenda. Overcoming political failures that prevent consensus around the pressing need for a “skills for all” policy agenda is critical to Peru’s long term prospects for sustained growth and poverty and inequality reduction.

ANNEX 1: DETAILED POLICY RECOMMENDATIONS

These proposed strategic directions and most promising policy reforms *to ensure all Peruvian get the minimum level of skills required in the global economy and have equal opportunities to map them into suitable jobs* are:

- a. **Prioritize policies to level the initial playing field for all Peruvian children.** It is imperative to consolidate and translate into action a social pact for boosting a sustained investment in early childhood as has been stressed by the Pact for Investment in Early Childhood (*Inversion por la Primera Infancia*, 2010), in order to:
 - i. eradicate child malnutrition which, despite the recent welcomed reduction, *still affects around half a million Peruvian Children*, especially in rural areas, the Highlands and Jungle. Beside moral imperatives, it will be very difficult for these Peruvian children to develop the readiness to learn to become productive citizens in the 21st century economy when they start life with this severe disadvantage. In order to achieve rapid results and prevent new generations of children from being handicapped for life, it is essential to concentrate efforts on regions with higher malnutrition rates and the most cost effective interventions. International evidence shows that child malnutrition can be rapidly reduced through activities to monitor and support adequate child growth –by helping mothers adopt more adequate child health, hygiene, care and feeding practices—, particularly in the critical window of 0-2 years, as well as investments to ensure a safe access to water and sanitation services. Peru can still take advantage of the demographic window of opportunity by focusing specific efforts on:
 - The reform and expansion of Peru’s social safety nets, particularly continuing the strengthening of the management and operational capacity of Juntos, the country’s Conditional Cash Transfer (CCT) program, expanding its coverage to include eligible but currently excluded poor families, and matching it to an adequately expanded supply of nutrition and health services.
 - Ensuring access to quality basic health and nutrition services, by closing the gaps in human and other resources of health centers through performance-based financing, improved management and better accountability. Efforts can build on the nutrition strategic program (*Programa Articulado Nutricional* -PAN) –one of the key strategic programs within the country’s Performance-based Budgeting (PBB) system— which assigns budgetary resources tied to progress in the coverage of child immunizations, child growth monitoring and nutritional counseling to mothers (*Control de crecimiento y desarrollo* -CRED) and the demand-side incentives of Juntos.
 - Currently, the PAN, Juntos and CRED interventions in Peru present important limitations, compared to international good practices, which if properly addressed so as to achieve a well-ran and sized Juntos

program closely tied to well resourced and managed health centers, can be the basis for the eradication of child malnutrition in Peru. The strengthening of the SIS health insurance system and developing its semi-contributory window, in the context of the universal health insurance reform, is critical to avoid creating a set of unfunded and unfeasible entitlements.

- ii. foster adequate early-childhood development in the first 5 years of children's lives and through primary education. The evidence from several scientific disciplines decisively demonstrates that this is the sensitive period to develop the basic cognitive (e.g., verbal, numeracy, problem solving) and socio-emotional (e.g., self-regulation, resilience, social) skills that determine their readiness to learn through their youth and adult life. Attention is needed to:

- Ensure an adequate supply of ECD services, filling the gaps in coverage of poor children age 0-2, and continuing the recent rapid expansion of access to pre-school (age 3-5), paying careful attention to the pre-requisites needed to ensure quality services that develop school-readiness and are suitable to the characteristics of the population being served (e.g., ethnicity, rural context). The experience with recent reforms and innovations in the financing of new ECD initiatives in Brazil, Jamaica, Indonesia and Turkey, can offer lessons to generate feasible alternatives to expand quality coverage.

An important issue is ensuring that pre-school curricula and pedagogic practice pays adequate attention to the critical development of socio-emotional skills. There are approaches that have been proven effective. A leading example is Tools of the Mind, a Vygotskian preschool and early primary school curriculum, implemented in the U.S as a multi-faceted program in which teachers receive detailed curriculum materials and are extensively trained and supported throughout the school year. Key principles of the program's approach include scaffolding student development from regulation by others to self-regulation, mental tools (i.e., strategies) to help children gain control of their behavior, reflective and meta-cognitive thinking, practice of self-regulation via developmentally appropriate games and activities, and increasingly complex and extended social, imaginary play. Through random-assignment studies it has been demonstrated to improve children's self-regulation and performance on standardized achievement tests.

- Continue to improve the quality of primary education, building on lessons to improve and expand successful initiatives in Peru and other high-performing education systems. The common elements of successes are: (a) effective teachers, motivated and supported to teach and sustain their own learning; (b) school principals who are encouraged to lead effectively and promote adequate learning

environments and accountability; (c) commitment and involvement of parents and communities to assure student learning.

Efforts can be directed to build on the expansion of education strategic programs in the PBB system –learning from the experience with the only one existing (*Programa Estratégico de Logros de Aprendizaje - PELA*) – so as to cover all of pre-school and primary education, with a particular attention to the challenges of rural education and the inclusion of currently excluded groups.

A broader reform impetus is needed, as encompassed in the National Educational Plan (*Proyecto Educativo Nacional –PEN*), to improve: (a) institutional arrangements—clarifying mandates and roles in the sector—and management –through timely information—of the education system at the central, regional and local level, including empowering schools to exercise an effective role in local management and decision making; (b) pedagogic support, teacher training and evaluation, and roll out of the enhanced incentives to attract and retain effective teachers established by the new teacher public career law; (c) school infrastructure, equipment and pedagogic material; (d) the development of standards and capacities to assess learning in both cognitive and socio-emotional dimensions through the entire cycle of primary education in culturally sensitive ways. While their importance is recognized by educators, socio-emotional skills have remained relatively marginal to educational debates. They should be acknowledged when it comes to passing laws, setting targets or training teachers. The consistent application of international and national standardized tests to assess these skills should become common practice. The experience with related reforms and interventions in the world can offer useful lessons, such as recent innovations in the U.S., U.K., Colombia, Brazil, Korea and China.

As an example The Promoting Alternative Thinking Strategies (PATHS) curriculum teaches self-control, emotional awareness, and social problem-solving skills to elementary school children. Teachers trained to deliver the PATHS curriculum guide students through skill-building activities and also reinforce the same lessons throughout the school day. A recent random-assignment, longitudinal study demonstrated that the PATHS curriculum can boost academic performance as measured by standardized achievement test scores, with improved teacher and peer ratings of prosocial behavior and student academic engagement. Likewise, in a random-assignment study at an urban middle school, fifth grade students taught a technique of mental contrasting with implementation intentions (MCII) improved their report card grades and school attendance relative to students in a placebo-control condition. Children demonstrate superior self-control when using plans to avoid distraction and temptation so that this meta-

cognitive strategy might be introduced to children in the earliest years of formal education.

b. **Improve the quality and completion rates of secondary education**, to consolidate the development of the cognitive and socio-emotional skills of adolescents demanded by employers and which enable acquisition of technical, professional and job-specific skills later in life. In the global economy a minimum of secondary education is needed to compete at above subsistence wages. Yet 1 out of 4 Peruvian adolescents do not complete high school. Since 2004 there have been no national assessment of learning in secondary, but the performance in regional and international tests puts Peru far behind. To address this situation, promising actions are:

i. create a new strategic program for secondary education aimed to improve access, completion and learning. This would require varying modalities of provision in rural –allowing combined school and community work— and urban areas –tackling behavioral problems leading to violence, substance abuse, teen pregnancy—, tapping on the opportunities offered by information technology to improve teaching and student’s appeal for learning.

Where basic infrastructure is deficient, public investments in the construction and upgrading of schools and roads are sine qua none. The development of multi-grade schools learning from best practices such as the Colombian Escuela Nueva and the Chilean MECE Rural can address supply constraints cost effectively. Public-private partnerships to exploit good quality private urban secondary schools with excess capacity and other modalities such as multi-grade schools and distance education can be considered when the pre-conditions for their success exist.

Again, both curricula and pedagogic attention should be given to socio-emotional skills which remain highly malleable through adolescence. A recent meta-analysis of studies of universal school-based social-emotional learning programs reviews about 200+ controlled studies of programs involving over 270,000 children in the US in kindergarten through high-school documents their positive impacts on both course grades and standardized achievement tests scores, besides the targeted skills. These programs can be implemented as part of regular school subject curricula, although they require specific activities, goals, and pedagogic support for teachers, to be successful.⁷⁶

More targeted intervention efforts that teach children meta-cognitive strategies, such as goal setting and planning, can also improve self-regulatory competence and academic outcomes. The technique of MCII, for example, first developed as a self-regulatory strategy for adults, has also been shown to help children and adolescents. For instance, in a random-assignment study of high school students preparing for college

76. See studies in www.casel.org. The group CASEL (Center for affective, social, and emotional learning) is actively engaged on design, operation, and evaluation of these sorts of programs.

entrance examinations, students were instructed to mentally contrast the positive benefits of studying with obstacles that stood in the way of this study goal, and then to make a plan to obviate these obstacles. Compared to students in a placebo-control condition who wrote a practice essay for the entrance exam, students who learned MCII completed more than 60% more questions in study materials provided to students in both conditions.

- ii. as part of the broader education system reforms (outlined above), develop national standards and capacities to assess and develop both cognitive and socio-emotional skills of youth in culturally sensitive ways. This can be informed by a host of international experiences on defining standards to mainstream the issues in Australia's education system and implementing universal school-based interventions to improve socio-emotional learning together with cognitive competences. For instance, the States of New York and Illinois have established standards for socio-emotional skills in state education regulations and national legislation is being discussed in Australia, U.K., and Spain.
- c. **Expand access and reduce the wide variation in quality of tertiary education, to strengthen the full "value option" of skills investments and links to innovation.** Individuals and families factor in the promise of the bigger payoff to higher education in their education investment decisions, and they should be provided with timely and relevant information on market returns to various career paths and on the characteristics of the supply of programs with some minimum quality assurance. There are also known externalities of technical and professional skills to technological innovation, which can be tapped with deliberate policies. The focus can be on accelerating recent reforms in Peru to⁷⁷:

- i. develop the regulatory and quality assurance (accreditation) framework in education through the consolidation of the SINEACE system (*Sistema Nacional para la Evaluación, Acreditación y Certificación de la Calidad Educativa*, with its component entities, IPEBA for basic education, CONEAU for university education and CONEACES for non-university tertiary). Peru is lagging behind several countries in the region (e.g., Brazil, Argentina, Colombia, Chile) which have achieved important improvements in the relevance, efficiency and quality of the tertiary education system by improving the governance and independent oversight of the sector on the basis of voluntary but incentivized accreditation.

The law creating SINEACE in 2006 requires establishing minimum standards, setting criteria and evaluation guidelines for self-evaluation and accreditation, and providing public information on the quality of education. While the implementation has been sluggish, there have been progress on the standards, evaluation criteria, accreditation guidelines and self-evaluations for medical schools and tertiary institutions responsible for teacher training (the two areas with mandatory accreditation), the latter

⁷⁷ Chacaltana (2010) and Sanchez Puerta (2009) offer a more detailed review of the international experience and Peruvian programs.

being of strategic importance for the quality of basic education. Swifter and decisive action –through full budgetary and institutional support— is needed to strengthen SINEACE agencies in the implementation of their mandates.

- ii. establish reliable mechanisms (labor market observatory and consolidated employment service) to communicate regular information about the quality and returns of higher education programs and the most demanded skills. Several countries have established labor market observatories (such as Chile and Colombia) and employment services to inform both career choice, training investments and facilitate job search.

Proposals for a labor observatory in Peru have been made but not yet undertaken. Recently, the Ministry of Labor institutionalized the national employment service which delivers data on skills and credentials tied to vacancies posted by small firms. The associated job pool is small and covers largely the lower segment of the work force. The private sector employment agencies cover also a small but high-end market. Employers and workers alike may find some value if the data from these two sources of vacancies could be communicated in order to achieve a broader coverage of the labor market.

Given the frequent use of direct contact to employers, job fairs could also be a fruitful complementary strategy to facilitate the matching of skills supply and demand.

- iii. adopt the use of performance-based financing, through a competitive fund, to provide additional resources to accredited tertiary institutions focused on investments and activities that can impact quality positively. A substantial portion of public support to the sector continues to be allocated based on ad-hoc, not always equitable criteria, and historical arrangements. Drawing on international experience, competitive funds can allow to break this inertia and channel additional resources to support investment and activities, within a pre-identified positive list of quality enhancers, as part of an “improvement plan” drawn by each institution as a result of a process of self-evaluation to define its mission, goals and flagship programs of study. Institutions are then to be held accountable for reaching these, while encouraging diversity in institutional missions.
- iv. increase equity in enrollment by expanding student finance (loans, scholarships) to support qualified (high school completed) students attend different types of tertiary institutions, based on needs, merits and tied to institutions fulfilling their accreditation through SINEACE. Public support to student finance is currently limited, and Peru could benefit from lessons of innovative loan programs in the region (such as Chile’s Preferential School Subsidy, CAE, and Colombia’s ICETEX) which have proven effective to improve access of low-income students and also to provide incentives to the voluntary participation of institutions in the accreditation system. The build in features to ensure sustainability such as delegation of

loan processing and recovery to private banks with partial government guarantee on the repayment. Moreover, a strategic partnership with the private sector (including private universities) and civil society can help fund and operate these programs through competitive biddings.

- v. foster links between firms and universities locally and abroad with respect to R&D, knowledge sharing and research networks. The growth in the demand for skills and thus the ability to maintain attractive private returns to a tertiary education under rising enrollment hinges on the ability to attract more technology and R&D intensive domestic or foreign investments. International experience suggests a focus on aligning incentives for highly skilled researchers (promotion and rewards based in part on performance), institutions and firms (both of which should share intellectual property rights and rewards with researchers), promoting mobility (support for assignments abroad) and collaboration with external partners.
- d. **Address skills gaps of youth and adults using selective interventions, including incentives for firm training, public financing with private provision, and targeted programs.** The evidence on life-long learning and training interventions for workers who leave school before completing basic education shows a mixed track record, ranging from programs (vocational, or publicly provided training) producing very limited impact to privately-provided youth training programs shown to have important returns. The international experience suggests that an adequate training system for less educated workers relies on a variety of policies and mechanisms suited to a heterogeneous workforce and constraints being addressed. Existing adult training policies in Peru can be strengthened by:
- i. creating the right incentives for firms to train their workers, as public funding is unlikely to ensure a stable and adequate level of financing, – by: (a) putting in place a payroll tax exemption to firm training investments, revising distortions in the existing Peruvian tax legislation that discourage firms from undertaking more training; b) ensuring training is relevant to market needs by allowing payroll-tax proceeds to be used for in-service training or to purchase training at an accredited (by SINEACE) training institution. A pre-requisite of successful schemes is an effective, simple mechanism for administering payroll exemptions through the tax system since complicated rules for reimbursing claims lead to employer noncompliance.

With the right incentives, firm training is likely to address the needs of job-specific training. A successful experience from which lessons can be drawn in Peru is the National Service for Industrial Labor Training (SENATI) which is funded through industrial firms' contributions and has achieved international certification and a positive performance in placing graduates in the labor market. Firm training is less likely to cover general training, for example, on socio-emotional skills. Moreover, less experienced and educated workers and small employers tend to benefit

substantially less from these schemes, which leaves at least 50% of workers excluded.

- ii. expanding the scope of the Pro-Joven youth employment program to strengthen a core set of cognitive and socio-emotional skills and cover a higher share of low-income youth. This program has a proven track record of providing valued combine class-room and workplace training to about 70 thousand youth over little more than a decade. This, however, is only a fraction of the potentially eligible population. Recent developments in similar programs enhance comprehensive training to emphasize behavioral (socio-emotional) skills – besides technical, basic cognitive or specific trades – given their malleability through early adulthood and their importance in the labor market. Interestingly, these elements were originally intended to be more prominent in the first design of Projoven.

Because socio-emotional skills are more easily improved through early adulthood than are cognitive skills and they often stabilize in the formative years, public policy can help stimulate their development over longer periods. For instance, there is evidence that older students develop socio-emotional skills as a benefit of mentoring programs.⁷⁸ However, these programs are quite rare and of limited scope in Peru and elsewhere in the region. Only recently the development of ‘soft’ skills has become a central part of the curricula of some labor training programs in the region.

Given the strong effects of parental education on children’s skills formation there is a potential role for programs targeted at improving the educational level and skills of the adult population. However, the international experience with ‘second-chance’ and equivalency programs to bring older school drop-outs up to acquire the equivalent of a high school diploma shows a disappointing record. Evaluation evidence indicates negligible effects on employability. Recent experiences in Chile and Mexico in support of lifelong learning hold some promise. For instance, the Chile Califica program allowed to strengthen the articulation between grades 11-12 of technical-vocational secondary schools, the post-secondary level and labor market demands. The program lacks a rigorous evaluation of impacts on labor outcomes. There is not a well tested recipe but a host of international experience, both failures and successes, to learn from.

- e. **Reinforcing accountability for basic health, nutrition and education services in the context of decentralization and a more developed PBB system.** Peru has made important progress over the last decade in strengthening accountability relationships in education, health and social protection, which is likely to bear on the recent improving trend in education, health and nutritional outcomes. Strong evidence from

⁷⁸ See Heckman and Carneiro (2003), and Cunha, Heckman, Lochner, and Masterov (2006). In the U.S effective programs include Big Brothers/Big Sisters, which pairs adult volunteers with youth from single-parent homes.

Peru and elsewhere shows that children whose parents are engaged with their service providers are likely to do better. The interaction of the accountability agenda with the decentralization process and the development of the PBB system is a central theme for social policy over the coming five years. To maintain momentum, action in several fronts is recommended:

- i. further enhance client power in social programs by strengthening effective citizen identification for children (creating a national database with unique identity number (CUI) in birth certificates) to eliminate exclusion in social programs and services, continuing to encourage parents to expect and demand better outcomes for their children (popularizing standards), and promote user involvement in services provision at local level (CONEIs in education and CLAS associations in health should be reinforced).
- ii. reinforce the performance budgeting system through stronger accountability arrangements (performance agreements) between the financing bodies (national and sub-national), oversight agencies (DIRESAS, UGELs) and front-line providers (schools, hospitals, health posts), linking administrative data on outcomes and service quality to inform incremental budget allocations.

It is key to align the incentives of the system consistently to achieve results through credible business plans for each sub-sector (health, nutrition, education) with clear goals, adequate resources, aligned incentives of providers and users, and accountabilities of agents clearly specified. Further strengthening of administrative data systems is critical for a well-functioning system for monitoring performance. Effective service provision could then be systematically rewarded and in some cases ineffective performance penalized through the budget process, although the latter poses political difficulties.

- iii. progressively move towards the use of transparent equity-adjusted capitation financing of social services to ensure an adequate and equitable allocation of resources to national and subnational entities. While there might be some room to translate current social spending into better outcomes, there are serious limits to what can be achieved unless expenditures are increased. Some targeted, gradual and performance-based increases in social expenditures is needed to correct for low levels of funding and to close the gaps in quality and inclusion mentioned above.
- iv. continue to reinforce the dimension of citizens' voice in the making and monitoring of public policies through the participatory budget reforms, advances with fiscal transparency and the involvement of civil society and sub-national government agencies in monitoring the performance of the education and health systems.

ANNEX 2. ENCUESTA NACIONAL DE HABILIDADES (ENHAB) DE PERU URBANO, 2010

Skills Measurement

- Sample: age 14-50, one randomly-chosen (pre-field) member per HH (n= 2,666) without replacement (exclude illiterate, non-spanish speaker)
- Cognitive tests (after pilot validation/revisions):
 - PPVT 4 (verbal perceptive ability, images are shown and must be matched to words, standardized protocol)
 - Verbal fluency (# valid P-words in 3 mins)
 - Short-term Memory (ability to recall progressive sequence of digits read to test taker)
 - Numeracy-problem solving (18-item multiple choice test, timed 15 mins)
 - Personality tests
 - BFF 35-item bipolar adjectives, short-sentenced inventory (pre-tested in Lima student population) and 17-item GRIT scale (adapted to Peruvian context)
 - Special, intensified training and evaluation of enumerators (chose best).
 - *US\$10 incentive* to participate. Applied in regular home environment though enumerators instructed to secure quiet space. Recorded data on administration conditions (time, duration, distraction, examiner FE)

ANNEX 3: MEASURING SOCIO-EMOTIONAL TRAITS: BIG-FIVE PERSONALITY FACTORS

Big Five Factor	APA Dictionary description	NEO-PI-R facets (trait adjective)	Other related constructs
Conscientiousness	“the tendency to be organized, responsible, and hardworking”	Competence (efficient) Order (organized) Dutifulness (not careless) Achievement striving (ambitious) Self-discipline (not lazy) Deliberation (not impulsive)	Grit / Perseverance Delay of gratification Impulse control Self-efficacy
Neuroticism/ Emotional Stability	Neuroticism is “a chronic level of emotional instability and proneness to psychological distress.” Emotional stability is “predictability and consistency in emotional reactions, with absence of rapid mood changes.”	Anxiety (worrying) Hostility (irritable) Depression (not contented) Self-consciousness (shy) Impulsiveness (moody) Vulnerability to stress (not self-confident)	Self-esteem Internal locus of control Depression and related disorders
Agreeableness	“the tendency to act in a cooperative, unselfish manner”	Trust (forgiving) Straight-forwardness (not demanding) Altruism (warm) Compliance (not stubborn) Modesty (not show-off) Tender-mindedness (sympathetic)	
Openness to Experience	“the tendency to be open to new aesthetic, cultural, or intellectual experiences”	Fantasy (imaginative) Aesthetic (artistic) Feelings (excitable) Actions (wide interests) Ideas (curious) Values (unconventional)	
Extraversion	“an orientation of one’s interests and energies toward the outer world of people and things rather than the inner world of subjective experience; characterized by positive affect and sociability”	Warmth (friendly) Gregariousness (sociable) Assertiveness (self-confident) Activity (energetic) Excitement seeking (adventurous) Positive emotions (enthusiastic)	

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